RIVERSIDE TEXTBOOKS
IN EDUCATION

PRINCIPLES OF MODERN EDUCATION

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EDITOR'S INTRODUCTION

At no time during the present century has there been more need for teachers and school officers to possess a clear conception of the basic foundations of modern education. On all sides one hears today suggestions for making the school over so that the education imparted therein may better fit the hypothetical needs of a rather ill-defined future social life. One group tells us that the teachers of America should seize power and align the school with other organized groups for purposes of propaganda and advancement. Another group talks fluently of using the school to prepare for a new order of society, though what this order is to be is by no means clear. A theory of progress favored by some is that what is to come must of necessity be right, and that the past can safely be left behind.

That we are in an era of unusual social change must be admitted. Probably never before was the school in such a state of flux as it is at present. The character of the earlier school population has changed, and compulsory education and lack of working opportunity have brought entirely new classes of society into the schools and raised often unwarranted public expectations as to results to be obtained from public education. Instead of the old selected group that came because it wanted to learn, we now have to deal with all the children of all the people, many of whom have no zeal for study or learning. In an effort to adapt the school to the needs of these new social classes the old curriculum has been largely replaced by new studies considered better to meet the needs of citizens of the future. New subjects of instruction, new methods in teaching, new objectives, new ideals,

38653

and new standards have been set up, and the supposed virtues of these newer candidates for favor have at times been proclaimed as though education with us had no roots in the past and no sound basis in educational theory, and as though the patterns for social change could be formulated at will instead of growing out of the culture of our people.

It is good at such a period of social and educational unrest as the present that those preparing to become teachers should be made keenly aware of the fact that any sound educational program must of necessity have its roots deep down in those fundamental conceptions — biological, psychological, sociological, and historical — from which all sound educational theory must be derived. Furthermore, sound educational practice, either in the classroom or in the administration of the school, needs to have behind it correct principles drawn from a study of these same fundamental bases. To provide instructors in teacher-training institutions with the needed materials for such an orientation of those in training has been the objective of the authors of this volume, and it is believed that they have developed a textbook that will find a wide use for itself not only in teacher-training institutions but among teachers in service as well.

ELLWOOD P. CUBBERLEY

AUTHORS' PREFACE

EDUCATION has become our country's most important and largest enterprise. Approximately a million teachers and thirty million students are directly engaged in school work. When to these thirty-one million are added the publishers of textbooks, the manufacturers of instructional equipment and supplies, the producers of building materials, the school-building architects and craftsmen, the janitors, and the many others who devote their time and energy to the promotion of school work in one way or another, the result is the astounding fact that more than a fourth of our total population is engaged in school work as its principal employment. With the increasing use of modern machinery in supplying economic needs, there is every reason to believe that a much larger proportion of our population will be devoting more and more time to educational pursuits. The public school is a gigantic and rapidly growing institution involving a vast money investment of around seven billion dollars in permanent property, and costing annually nearly four billion dollars to maintain.

Not only is the business of education unequaled in magnitude, but it is also the country's most momentous social function. Education is all that stands between our present standard of living and that of the most primitive savage. Without attention to education all of our racial achievements would perish and civilization would end in catastrophe. Education cannot be neglected for even one generation without disastrous consequences. The perpetuation and progress of civilization depend upon the efficiency of the public schools. Civilization's best form of investment is in education. Civilization's only form of insurance is in public schools. This is becoming increasingly true and important as machine slaves are providing a greater and greater margin of leisure for all.

Certainly a public function so important and vast as education should be guided by a sound educational philosophy. Search should be made into the reasons for and the nature of the various educational practices of our time. The general principles or conceptions of education which have been evolved should be studied, evaluated, and systematized into a convenient form for directing future educational procedures and policies. Much of our educational practice has obviously been guided by expediency rather than by principle. This has frequently been necessary for want of something better for accomplishing a given end. However, if education is to respond most satisfactorily to the urgent demands which are now being made upon it, it must be guided by sound principles systematized into a working philosophy of education.

It is therefore the purpose of this volume to consider this important problem of a philosophy of education, to discuss the main bases upon which the process of education depends, and to explain somewhat the philosophy lying back of various modern educational practices in the United States. As a background for this, some of the philosophies of education held in the past are presented. The bases of education are taken up from four main viewpoints: namely, the biological, the psychological, the sociological, and the historical. The principles lying back of some of the outstanding American practices in school organization, administration, teacher training, methods of teaching, supervision, classroom organization, discipline, and curriculum construction are explained and evaluated. An attempt is made to bring to the fore a clear concept of the meaning and the function of American education, and to show the extent to which practices have been developed in conformity with this meaning and in performance of this function.

Necessarily the presentation in a large part is suggestive rather than a complete and final statement.

It is believed this volume will provide a valuable text for the culminating education course in teacher training. It tends to bring together in a unified whole the contributions of other education courses. In this way it will furnish the student with a perspective or post-view of the previous professional work and bring out the interrelation of the previous teacher-training courses. It will as well furnish to the student an orientation or preview of the school work upon which he is soon to become engaged. The beginning teacher, principal, supervisor, and superintendent will thereby be put in possession of a systematic body of general conceptions and principles with suggested implications of their practical applications. Those in service who have not obtained sufficient training in the theory of education will also find this volume helpful in the formulation of the philosophical background for school work.

FRANK W. THOMAS
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CONTENTS

PART I

A PHILOSOPHY OF EDUCATION

CHAPTER I. THE SIGNIFICANCE OF A PHILOSOPHY OF EDUCATION 3

Philosophy, theorizing, and practice — Every profession has some practical philosophy — The meaning of a philosophy of education — What it must include — The basic facts and principles of education — The selection of educational objectives — Criteria for the determination of objectives — Evaluation and organization of principles — The practical significance of a philosophy of education — Topics for discussion — Suggested exercises — Selected references for additional study.

CHAPTER II. WHAT IS EDUCATION? 20

Conflicting conceptions of education — Educational growth by accretion and storage — Education as mental discipline — The psychological approach in educational theory — The individual as the starting-point — Education as adjustment — Types of behavior adjustment — Education as self-activity — Basis of all learning — How education may be directed — Topics for discussion — Suggested exercises — Selected references for additional study.

CHAPTER III. PHILOSOPHIES OF EDUCATION 38

Philosophies of education — How philosophies of education are conditioned — Major philosophies — Idealism in education — Contributions of idealistic educators — Naturalism in education — Contributions of naturalistic educators — Pragmatism in education — Contributions of pragmatic educators — Philosophies of education conditioned by the world today — Topics for discussion — Suggested exercises — Selected references for additional study.

PART II

THE BASES OF EDUCATION

CHAPTER IV. THE BIOLOGICAL BASIS OF EDUCATION . . 65

The biological basis of education — Man an animal — Some striking similarities — Biological aim in education — Why human beings can make superior adjustments — 1. The freedom of the hand — 2. The vocal apparatus for articulate speech — 3. The highly developed human brain — Cerebro-spinal system complicated — Topics for discussion — Suggested exercises — Selected references for additional study.

CHAPTER V. THE BIOLOGICAL BASIS OF EDUCATION (*continued*) 82

4. Prolongation of infancy — Significance of prolonged infancy — Adolescence — Variation — Causes of variation from type — Mendel's laws of inheritance — The endocrine or ductless glands — Mental life — Topics for discussion — Suggested exercises — Selected references for additional study.

CHAPTER VI. THE PSYCHOLOGICAL BASIS OF EDUCATION . 98

The psychological basis of education — Psychology as an evolving science — Divergent systems and points of view — Structural psychology — Functional psychology — Behavioristic psychology — Gestalt Psychology — The psychophysical system of psychology — Other methods and emphases — What approach is most useful to education? — Topics for discussion — Suggested exercises — Selected references for additional study.

CHAPTER VII. THE PSYCHOLOGICAL BASIS OF EDUCATION (*continued*) 116

What help should be sought from psychology? — Native equipment — Incompleteness and adaptability of native tendencies — Our emotional inheritance — Capacities and variations — Individual and group differences — Differences due to race and sex — Effects of age and maturity — Interest and motivation — The influence of physical conditions — The transfer of training — Types of learning activity — The acquisition of habits and skills — The mastery of knowledge — Emotional outcomes of learning — The measurement of educational products — Topics for discussion — Suggested exercises — Selected references for additional study.

CHAPTER VIII. THE SOCIOLOGICAL BASIS OF EDUCATION . 140

The sociological basis of education — Group life — Advantages of group life — Communication and the social group — Classification of accumulated experience — Social institutions — The social inheritance — Individual and group relationships — Increasing significance of the social group — Education and the social group — Topics for discussion — Suggested exercises — Selected references for additional study.

CHAPTER IX. THE SOCIOLOGICAL BASIS OF EDUCATION (*continued*) 158

Social activities and educational objectives — Health — Command of fundamental processes — Worthy home membership — Vocation — Citizenship — Worthy use of leisure — Ethical character — Topics for discussion — Suggested exercises — Selected references for additional study.

CHAPTER X. THE HISTORICAL BASIS OF EDUCATION . . . 180

The historical basis of education — Informal education — Formal education — Institutionalized education — The school — Class education — Mass education — Education of women — Education of the handicapped — Universal education — Topics for discussion — Suggested exercises — Selected references for additional study.

CHAPTER XI. THE HISTORICAL BASIS OF EDUCATION (*continued*) 195

American education — European transplantations — Educational transition — Public school awakening — Educational expansion — Educational readjustment — Topics for discussion — Suggested exercises — Selected references for additional study.

PART III

PHILOSOPHY OF AMERICAN EDUCATIONAL PRACTICE

CHAPTER XII. ADMINISTRATIVE ORGANIZATION 215

The functions of administration — The major divisions of school organization — The elementary school — The secondary school — Higher education — Professional leadership — Incidental administrative duties — The schools and the public — Means of promoting public co-operation — Topics for discussion — Suggested exercises — Selected references for additional study.

CHAPTER XIII. THE TEACHER 234

The teacher — The teacher as part of the environment — Physical and mental fitness — Social and philosophical stability — The teacher as a manipulator of environment — Academic preparation — Professional preparation — Evolution of teacher training — Social significance of teaching — Topics for discussion — Suggested exercises — Selected references for additional study.

CHAPTER XIV. METHODS OF TEACHING AND SUPERVISION . 251

The basis of good teaching — Essential phases of the learning process — Their relative emphasis — The "progressive" viewpoint as to methods — The conservative viewpoint — The common fundamental principles of method — Adapting methods to types of learning — The teaching of habits and skill — The teaching of information — The teaching of appreciations and attitudes — Socialized activities and projects — Relation of supervision to teaching — Scope and methods of supervisory practice — Teamwork in the improvement of teaching — Topics for discussion — Suggested exercises — Selected references for additional study.

CHAPTER XV. SELECTION OF SUBJECT-MATTER . . . 270

The significance of subject-matter — What is a curriculum? — Conflicting principles of selection — The text-book — Traditional organization of subject-matter — Influence of quantitative standards — Pressure of special groups —

What should a course of study include? — Teacher participation in preparing courses of study — Integrating the materials of instruction — Day-to-day activities and subject-matter — Keeping selections tentative and adaptable — Topics for discussion — Suggested exercises — Selected references for additional study.

CHAPTER XVI. CLASSROOM ORGANIZATION AND CONTROL . 286

The necessity for organization — The physical features of the classroom — The school as a social unit — Constructive social control — Violation of established order — The functions of punishment — The administration of punishment — Self-government — Organization must be adaptable — Topics for discussion — Suggested exercises — Selected references for additional study.

CHAPTER XVII. INDIVIDUAL DIFFERENCES 298

Understanding the individual pupil — Individual differences — Measuring individual differences — Significance to education — Providing for individual differences — Factors contributing to individual differences — The factor of sex — The factor of race — The factor of maturity — The factor of family — The factor of environment — Special abilities — Emotional and temperamental differences — Topics for discussion — Suggested exercises — Selected references for additional study.

CHAPTER XVIII. PRESENT TRENDS AND PROBLEMS . . . 316

Evolving educational problems — Education for adults — Educational and international relations — National participation in education — New trends in the curriculum — Integration of curriculum materials — Popularized higher education — Less vocational specialization — Socialized health — School finance — Educational leadership — New-type teachers — Topics for discussion — Selected references for additional study.

INDEX 333

PART I

A PHILOSOPHY OF EDUCATION

CHAPTER I

THE SIGNIFICANCE OF A PHILOSOPHY OF EDUCATION

Philosophy, theorizing, and practice. There is a popular tendency to regard the term philosophy as vaguely synonymous with mere theorizing. Since there is an equally popular belief that education should be made more practical, our title which links education with philosophy is likely at the outset to arouse a critical or even antagonistic attitude on the part of many readers. Why can't education go about the work of solving its problems and meeting its responsibilities in a more direct, matter-of-fact manner, such as is followed by a practical profession like engineering?

The authors confess a certain sympathy with the general viewpoint which prompts such a query. There would be danger, however, of serious misunderstanding if we attempted a discussion of this question without defining the terms which are involved; and such definition, in turn, will be easier if we first examine the methods by which a practical profession like engineering undertakes the planning and execution of a definite project of major importance. It is probable that we shall find illustrations and suggestions in that field which will serve to clarify the corresponding phases of educational thought.

The practical "philosophy" of engineering. A very familiar and impressive achievement of engineering thought and skill was the building of the Panama Canal. Taking that great project as an illustration to which reference may occasionally be made, let us note the manner in which those entrusted with such an undertaking proceed to the selection of basic principles and to the development of plans in harmony therewith.

It is of course a well-known fact that engineering draws heavily upon the principles of mathematics. Yet no engineer expects to make use of all the facts of mathematics. Indeed, some mathematicians take pride in the apparent lack of any direct use or application for some of their highly abstract formulae — pure mathematics, untainted and undefiled. So the engineer selects from the wealth of mathematical material available only those formulae and computations which seem to have value for his work. In a specific project, such as our illustration, the selection and evaluation of such data are unusually discriminating. Unnecessary and irrelevant facts confuse and obscure the purpose in hand; only pertinent data may receive final consideration. Formulae and processes for computing stresses, strength of materials, factors of safety, gradients, stability of slopes, and feasible cost ratios — all these are utilized and emphasized in proportion to their relative importance for the proposed construction.

Other sciences are drawn upon in this basic planning, and the competent engineer must have a reasonably clear conception of the extent to which these sources are likely to furnish aid. Geology must be called upon for information regarding the nature, stability, and durability of the rock formations to be encountered in excavation or used as foundation for structures. Studies and records in meteorology must be consulted so as to plan for weather conditions and provide against probable fluctuations in rainfall and stream levels. Sanitation is always an important, sometimes the determining, factor in the success of any large undertaking of this type. Closely related to the scientific regulation of health conditions are the provisions for social and recreational welfare. With some such total picture as this in mind, General Goethals said, "When the human problem is solved, the Canal will be built."

This general illustration will serve to show how the construction engineer, in fitting himself for the varied responsibilities of his profession, acquires at least a working familiarity with the related fields of knowledge from which basic data must be drawn for his undertakings. Even more essential is his facility in evaluating the factual material available, ascribing major and fundamental importance to certain principles, and subordinating others into minor but appropriate relationships. The considerations which determine this selection and the evaluation of such facts and principles as seem pertinent to the purpose constitute the distinctive feature in the professional "philosophy" of the engineer. The fundamental difference between individual engineers and between "schools" of engineering lies not so much in the scope of scientific information recognized by each as in the relative emphasis and value assigned to selected items of this knowledge and the resultant organization or integration of these items into working plans. This difference is reflected in divergent viewpoints as to the proper training of engineers, illustrated in recent years by the action of certain prominent institutions in introducing into their engineering curricula more of the social studies instead of retaining a narrowly technical program.

The meaning of a philosophy of education. The development of a philosophy of education, in the sense in which the term will be employed throughout this book, parallels closely the corresponding phase which we have noted in the profession of engineering. The approach should be in every way as practical and direct as in the case of engineering, at least in so far as the material is correspondingly tangible and objective. The "human factor" which Goethals recognized as crucial in a great engineering project may be expected to loom far larger in the problems of education by the very nature of the processes involved and the results sought.

If we pursue the comparison step by step we soon find an illustration of this latter difference. Both types of professional philosophy must start with basic scientific facts, such as affect the purposes in hand or condition the procedures to be employed. Both must include further the more important feature of selecting and evaluating this basic data in the light of the aims and objectives sought. Just here lies an added problem and responsibility in connection with a philosophy of education. The aims sought in an engineering project are clear and obvious; and, since the outcomes will take material form, they are easily measured, tested, and subjected to the requirements of direct and immediate service and utility. The aims of education are concerned with the less tangible and more flexible human values, involving character, citizenship, and social attitudes and appreciations, as well as mastery of facts and practical skills. Although these last named may be tested, measured, and demonstrated in a very definite way, even these cannot take the wholly objective forms regularly characterizing an engineering achievement. The essential difference, then, between developing a working philosophy of education and one of engineering lies in the nature of the aims or objectives sought, the character of the materials with which one must work, and the radically different forms in which the results are to appear.

What must a philosophy of education include? Our comparisons and illustrations have by this time served whatever useful end they may have had as an approach to our problem. It is now our purpose to set forth in more specific and definite form some statement as to the scope and meaning of the terms used in our chapter heading, especially with reference to the sense in which they will be used throughout this volume.

Although the formulation of his own philosophy of education must always be, in some respects, the unique and personal reaction of everyone interested in the profession, any adequate philosophy in this field must include three essential elements. These are: first, a reasonably accurate and comprehensive *understanding* of the fundamental facts of the sciences and fields of learning bearing directly upon the problems of education, especially as these relate to the nature and behavior of the learner and to the social relationships in which he is to participate; second, the *selection* or acceptance, in the light of this information, of certain objectives toward which educational activities should be directed; and, third, the *evaluation* of essential principles and practices with a view to their organization, on the basis of their relative importance, into a scheme of educational procedure. All three of these elements are closely related and interact upon each other. For example, the scheme of values involved in the third will be influenced primarily by the nature of the objectives chosen, but partly, also, by one's interpretation of the basic biological, psychological, and sociological facts. Other interactions could be cited, but the logical steps in the formulation of a philosophy of education would deal with the three elements in the order named.

The significance and implications of each of these elements are such as to merit a separate and more detailed consideration at this time. Such discussion should serve also to clarify further our terms and viewpoint before an attempt is made to set forth the general significance of a philosophy of education.

The basic facts and principles of education. Probably the main reason for the tendency in some quarters to discredit philosophies of education has been the too prevalent practice, at times, of mere "armchair theorizing" about education. The most effectual corrective for this disinclination to seek first the pertinent facts has been the "scientific movement" in education, with its predominant influence during the past two decades. The methods of scientific research have been brought to bear upon educational problems of every kind with a view to their solution or simplification. As educational thinking became, in consequence, more critical, increasing emphasis has been placed on the fundamental sciences on which a sound educational program must be based. These basic studies are primarily in the fields of biology, psychology, and sociology. It is significant that modern curricula concerned with preparation for professional service in education, from classroom teaching to administration, have come, practically without exception during the last decade, to include required courses in each of these fields. Later chapters in this book discuss each of these fundamental studies in relation to its place as a basis for education. In that connection, the pertinent facts and principles derived from each field will be stressed from the standpoint of educational significance.

The selection of educational objectives. Probably the most vital step in developing a philosophy of education consists in the selection of objectives. The evaluation of principles, the choice of methods, the plan of organization, the selection of materials and subject-matter — all will be influenced or definitely determined by one's convictions as to what education should strive to accomplish or what its outcomes should be. As we survey the contributions of famous educational reformers and leaders, we usually find that the keynote of the characteristic philosophy of each is found in his conception of the immediate and ultimate purposes or aims of education. The extent to which this is true may be noted in a subsequent chapter, where various philosophies of education will be examined.

The basis for the establishment and justification of educational objectives must be sought again in the known facts regarding the nature and capabilities of the learner, on the one hand, and the requirements as well as the opportunities of social life on the other. It is true that religious groups have set up educational programs based on aims related primarily to preparation for a life hereafter, but even such objectives are drawn from convictions as to the spiritual needs of the individual in the light of the nature of man, as conceived by that religious group.

Sharp differences of opinion have frequently arisen over the question as to whether education should have as its primary aim the fullest development and happiness of the individual, or the good of society. The belief that there is an insuperable conflict between these two considerations, necessitating that one or the other be subordinated, has generated much heated discussion. Such arguments are made to seem relatively futile by more recent studies in social psychology which indicate that the two are in fact reciprocal sides of the same thing. In other words, the most complete development and happiness of the individual comes through social stimulation, social appreciation, and reciprocally useful, harmonious relationships with his social group. At the same time, society is best served and strengthened by having its individual members possess a rich variety of well-developed talents and skills, appropriate to the ability and interests of each. Conversely, mistaken emphasis upon promoting the interests of either the individual or the group at the expense of the other necessarily tends to defeat ultimately its own ends. One is probably justified in stating that the greatest element of progress in the development of modern society has been the achievement, on the whole, of greater freedom, security, and opportunity for the individual through more intelligent social co-operation. The ideal to be sought as a major aim of education is Mazzini's famous definition of democracy: "The progress of all, through all, under the leadership of the wisest and best."

Modern statements of educational aims. In characteristic statements by well-known modern educators as to the aims of education, we find reflections of this conception that the best interests of the individual and of society are so interrelated as to admit of no separation, and that the individual must find his fullest satisfaction and development through educational experiences which include preparation for service to and co-operation with his social groups. For example, Dewey, in setting forth "social efficiency" as the foremost aim of education, states the relationship as follows:[1]

> If an individual is not able to earn his own living and that of the children dependent upon him, he is a drag or parasite upon the activities of others. He misses for himself one of the most educative experiences of life. If he is not trained in the right use of the products of industry, there is grave danger that he may deprave himself and injure others in his possession of wealth.
>
> Ultimately social efficiency includes good citizenship, for it means neither more nor less than capacity to share in a give-and-take of experience. It covers all that makes one's own experience more worthwhile to others, and all that enables one to participate more richly in the worth-while experiences of others.
>
> This is impossible without culture, while it brings a reward in culture because one cannot share in intercourse with others, without learning, without getting a broader point of view and perceiving things of which one would otherwise be ignorant.

Bode, in the preliminary pages of his *Fundamentals of Education*, expresses his viewpoint in these words:[2]

> Life is more than vocation, more than culture, more than knowledge, more than citizenship. All these interests, to be sure, are interwoven in an endless tangle, so as to give some color to the notion that some one of them may be the final end, for which the others serve as means. It is evident, for example, that vocation and knowledge are necessary for good citizenship. But the converse is also true; and in any event, our perspective becomes distorted if we accord no value to knowledge or vocation except that of means to an end.
>
> In view of this situation the suggestion presents itself that our best clue to the educational problem lies in the concept of growth. Perhaps the most desirable and significant educational ideal for us to adopt is that of fostering intellectual and

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[1] Dewey, John. *Democracy and Education*, pp. 138–45. New York: Macmillan Co., 1916. Reprinted by permission.

[2] Bode, Boyd H. *Fundamentals of Education*, pp. 11–12. New York: Macmillan Co., 1921. Reprinted by permission.

spiritual growth. If this be the case, then the aim of education, in so far as education can be said to have an inclusive aim, is to provide as adequately as possible for the creation of new aims.

Strayer and Engelhardt state the matter in the following simple terms:[1]

> The schools of a democracy are organized to provide an opportunity for individual growth and development to the end that each may live a happy and productive life. They must concern themselves as well, with the development of ideals and purposes which will enable the individual to find his greatest good in service for the group.

Undoubtedly the most influential and widely known modern statement of the objectives of education has been that prepared in 1918 by the Commission on the Reorganization of Secondary Education. Accepting the viewpoint that social efficiency should be the major aim of education, the Commission realized that this general term must be analyzed into very definite and specific objectives in order to provide practical usefulness in guiding educational programs. Accordingly, the following seven objectives were set up: health, command of fundamental processes, worthy home-membership, vocation, citizenship, worthy use of leisure time, and ethical character. The Commission's explanation and justification of this analysis appears in the following language:[2]

> In order to determine the main objectives that should guide education in a democracy, it is necessary to analyze the activities of the individual. Normally he is a member of a family, of a vocational group, and of various civic groups, and by virtue of these relationships he is called upon to engage in activities that enrich the family life, to render important vo-

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[1] Strayer, G. D., and Engelhardt, N. L. *The Classroom Teacher at Work in American Schools*, p. 1. New York: American Book Co., 1920.

[2] Commission on the Reorganization of Secondary Education. *Cardinal Principles of Secondary Education*, pp. 9–10. United States Department of the Interior, Bureau of Education, Bulletin, 1918, No. 35. Washington: Government Printing Office, 1918.

> cational services to his fellows, and to promote the common welfare. It follows, therefore, that worthy home-membership, vocation, and citizenship demand attention as three of the leading objectives.
>
> Aside from the immediate discharge of these specific duties, every individual should have a margin of time for the cultivation of personal and social interests.... Education for the worthy use of leisure is of increasing importance as an objective.
>
> To discharge the duties of life and to benefit from leisure, one must have good health. The health of the individual is essential also to the vitality of the race and to the defense of the Nation. Health education is, therefore, fundamental.
>
> There are various processes, such as reading, writing, arithmetical computations, and oral and written expression, that are needed as tools in the affairs of life. Consequently, command of these fundamental processes, while not an end in itself, is nevertheless an indispensable objective.
>
> And, finally, the realization of the objectives already named is dependent upon ethical character, that is, upon conduct founded upon right principles, clearly perceived and loyally adhered to.... Consequently ethical character is at once involved in all other objectives and at the same time requires specific consideration in any program of national education.

Criteria for the determination of objectives. In view of the impressive array of general aims and specific objectives which educational leaders, past and present, have advanced, the student of education may well ask how the validity of any proposed objective is to be tested. Unless some reliable criteria are available for proving or disproving the soundness of such proposals, we shall remain at the mercy of the armchair theorizers.

A suggestion as to the sources of such criteria is to be found in the statement of the Commission on the Reorganization of Secondary Education quoted at the close of the preceding section: "In order to determine the main objectives that should guide education in a democracy, it is necessary to analyze the activities of the individual." Such an analysis, taking into account the most reliable data bearing on the normal individual's native equipment, personal development, and appropriate social relationships, constitutes the most trustworthy procedure available. In this undertaking we shall again need to have recourse to the basic fields of study which furnish the foundational facts and principles for the educator. An illustration of this procedure, sufficiently adequate for the present, may be had by noting the basis for each of the seven objectives set forth in the *Cardinal Principles of Secondary Education* quoted above.

The first of these objectives, health, is so obviously sound and desirable as to need, apparently, no justification. But health is a relative term, and when we attempt to specify the conditions and degree of health essential to happy and efficient living we must rely upon both the biological sciences and psychology. For example, physiological psychology will reveal the extent to which normal behavior is dependent upon proper functioning of the bodily organs, and also the extent to which obstructed functioning vitiates efficiency and conduct. Psychology will also establish the conditions and vital importance of mental health.

Similarly, the sixth objective, worthy use of leisure, in its recreational phases will draw ample justification from the facts of physiology and psychology. But in its wider implications, the use of leisure has important social bearings and thus involves the criteria provided by sociological studies. Since the use of leisure time is directed, to a greater extent than any other type of activity, toward the satisfaction of peculiarly personal interests and desires, it would naturally be expected to clash more often than others with considerations of general social welfare. As a matter of fact, those leisure time activities which can be considered worthy from the standpoint of wholesome physical and mental effects are seldom objectionable when tested by social standards. Most individuals find their happiest use of leisure in social activities. There is a consequent obligation for organized society to develop many and varied opportunities wherein rich personal satisfactions may be attained in harmony with the general welfare. The work of determining the nature and demonstrating the value of such activities must find supporting data in all three of the basic fields of study already named.

The other five objectives as recommended by the Commission are all concerned directly and predominantly with social relationships and responsibilities. A discussion of the methods and sources of data by which each would have to be justified and its functions defined would follow lines similar to those of the preceding two paragraphs.

The evaluation and organization of principles. The third major step in developing a philosophy of education consists, as has been stated, in the evaluation of essential principles and practices with a view to their organization, on the basis of their relative importance, into a scheme of educational procedure. This step is the one most likely to be personal and subjective in character, varying with the individual who makes the evaluation. To show that education is not unique in this divergence of evaluation and application, it is only necessary to refer again to our comparison with engineering. Although the scientific facts basic to constructing the Panama Canal were wholly objective, and the purposes which the Canal was to serve were almost as equally undebatable, there developed nevertheless sharp controversy and disagreement among eminent engineers as to whether a sea-level canal or one employing a series of locks was the more advisable under the circumstances. Much Congressional debate was evoked before the issue was settled. The occasion of the controversy was the divergent interpretation and evaluation of the obvious data.

Similarly, in a philosophy of educational procedure, as we start from commonly accepted scientific data, we find less complete agreement in the formulation of objectives, and finally encounter still greater diversity in the matter of evaluation and application because of the subjective factor of personal judgment and opinion. From this fact springs the familiar succession of educational "plans," "methods," and "systems," each with its peculiar emphasis on favorite data, aims, and values. The resultant diversity may seem almost chaotic from the standpoint of professional unity or consistency, but the situation need not be permanently discouraging. Just as the engineers silenced much of the debate over the preferable type of canal by assembling the demonstrated facts as to the comparative success of each type wherever tried under conditions similar to those in question, so the validity of any system of educational values and procedures must be determined by impersonal measurement of the results secured. Even the claim that no entirely reliable tests have yet been devised for measuring certain important values sought in education does not vitiate the principle. The maxim, "By their fruits shall ye know them," applies in education as elsewhere. No educational philosophy can be considered sound and professionally defensible which does not seek to test the validity of its system of values and corresponding procedures by measuring the results of its use through the most effective and scientific means available.

Practical significance of a philosophy of education. If the definitions and illustrations which constitute the major part of this chapter have been reasonably clear and effective, the reader will already have drawn inferences as to the importance and significance of a philosophy of education on the part of everyone concerned with educational planning or service. Just to the extent that one's development of such a philosophy has been based on adequate knowledge of fundamental facts, and has been critically tested as to soundness of aims, relative values, and applications, will he merit any responsible share in an educational program. The absence of any well-considered philosophy makes one either a mechanical follower of routine or the victim of ill-advised and futile innovations. A thoughtful philosophy of education, however informally it may have been developed, gives purpose, proportion, and orientation to the whole range of responses which the individual makes to detailed educational problems.

In Part III of this volume, various practices in American education will be considered with a view to showing how divergent philosophies, each characterized by its distinguishing scheme of relative values, have inevitably emphasized correspondingly divergent systems of procedure. Although the adherents of a certain "school" of educational thought may be sufficiently unified regarding a philosophy to be in substantial agreement, even within such a group there will be minor variations, reflecting the personal interpretations and evaluations of the individual educators. Accordingly, it seems appropriate to conclude this preliminary discussion with the reminder that no one can intelligently adopt such a philosophy by passive acquiescence. In order to have any genuine philosophy of education at all, one must create it for himself, however much the result may seem to resemble that of another. Only by so doing can one integrate, in any measure, his educational thinking.

TOPICS FOR DISCUSSION

1. Prepare a list of five controversial issues, conflicting theories, or opposing practices in education. Show how a decision or preferred point of view in regard to each of these is dependent upon one's philosophy of education.
2. How do you account for the fact that the term *philosophy* has fallen into some disrepute among scientists and practical men of affairs? To what extent is their conception of the term erroneous?
3. Choose as an example some important undertaking in a field other than that illustrated in the text, and show how the solution of its problems depends upon a working philosophy.

4. In what sense is it true that every teacher must construct his own philosophy of education? Illustrate with reference to the selection of objectives.

5. Bode,[1] in his *Modern Educational Theories*, p. 345, says:

> "There is much talk at present of education as a science, but education as a science has a significant place only on the basis of a social program or educational philosophy. Take away this program, and the result is bewilderment and futility. The current enthusiasm for 'scientific education' is all too often oblivious to the fact that any guiding principle is necessary. Many of our educational leaders seem to approach their task without any definite point of orientation, without any clear consciousness of whence we have come and whither we ought to go."

In the light of Bode's statements, what is the foremost need in educational thought and in teacher-training?

6. Designate the objective which you regard as most important in education, and explain the "evaluation" which led to that preference.

SUGGESTED EXERCISES FOR STUDY AND DISCUSSION

1. Rank the following definitions of philosophy according to your opinion of their clarity and helpfulness to you:

Philosophy is —— a critical examining of familiar things.
—— a generalized theory of criticism.
—— a fundamental principle of choice.
—— the totality of one's loyalties.
—— one's world outlook.
—— a system of values.
—— one's view of the universe.
—— a sense of what life means.
—— a clarification of human values.
—— the criticism of abstractions.
—— a general theory of education.
—— an evaluation of facts and principles.

2. Select the best response, and verify:

—— The greatest problem in modern education is (1) how to teach (2) what to teach (3) when to teach (4) where to teach (5) who shall teach

—— Philosophy is related to (1) abstract thinking (2) intellectual exercise (3) ordinary experience (4) revelation (5) unusual experience

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[1] By permission of The Macmillan Company, publishers.

—— Common sense is (1) a fact unquestionably established (2) a self-evident truth (3) feeling of truth of something (4) a strong belief (5) unreflective opinions of ordinary men

—— Doubting is found especially among (1) children (2) educated (3) feeble-minded (4) illiterates (5) savages

—— Dogmatism is (1) an immediate understanding (2) inconsistent with common sense (3) belief about something (4) positiveness in matters of opinion (5) sufficient for specific requirements

—— Prejudice is (1) an incredulous attitude (2) an irrational belief (3) an unreasonable inclination (4) a firm belief (5) that which tends to prove or disprove something

3. Indicate whether the following statements are true or false, and verify:

T. F. Philosophy of education is an impractical subject for a teacher to take.
T. F. Philosophy relies upon scientific facts.
T. F. Educational objectives are involved in an educational philosophy.
T. F. Individual development versus social welfare is a truly philosophical problem.
T. F. Child interest versus social demand in curriculum selection is a philosophical question.
T. F. There is more disagreement about educational objectives than there is about educational methods.
T. F. Dewey is wrong in maintaining that theory is the most practical of all things.
T. F. Huxley is wrong when he says that irrationally held truths may be more harmful than reasoned errors.
T. F. Philosophically we should believe only those things which we can prove.
T. F. Philosophy has no place for superstitions.
T. F. The new is more easily believed than the old.
T. F. The reliability of common sense is overstressed.
T. F. We tend to believe what we want to believe.

SELECTED REFERENCES FOR ADDITIONAL STUDY

Childs, John L. "A Preface to a New American Philosophy of Education"; in *Social Change and Education*, Thirteenth Yearbook of Department of Superintendence, pp. 113–139.

Emphasizes the need of a sound philosophy of education in relation to social change and social needs.

Demiashkevich, M. *An Introduction to the Philosophy of Education*, chap. I.

Presents a general discussion of the science and the philosophy of education.

Doughton, I. *Modern Public Education — Its Philosophy and Background*, chaps. VI, VII and VIII.

A discussion of the scientific point of view in education. Each chapter has a good reading list.

Finney, R. C. *A Sociological Philosophy of Education*, chap. I.

This chapter is called "A Brief for the Philosophy of Education," and presents forceful arguments as to the necessity for such a philosophy.

Kilpatrick, W. H., and others. *The Educational Frontier.*

Emphasizes the need of an educational philosophy with critically evaluated objectives. The opening chapter by Bode is especially interesting.

Kilpatrick, W. H. *Source Book in the Philosophy of Education*, chap. I.

Excellent collection of short excerpts from various authors, all dealing with the meaning and significance of a philosophy of education.

Kuehner, Q. A. *A Philosophy of Education*, chaps. I and II.

Gives selected quotations on concepts of education, philosophy, and philosophy of education.

Morrison, H. C. *Basic Principles in Education*, chaps. I and II.

Deals with the development and importance of educational theory as a guide to improved practice.

Thomson, G. *A Modern Philosophy of Education*, chap. I.

A clear, brief analysis of the need for a philosophy of education, with some hints as to objectives, presented by a British educator.

CHAPTER II

WHAT IS EDUCATION?

Conflicting conceptions of education. The well-nigh universal practice of providing deliberately planned educational training for the young was implied in the preceding chapter. Even the most primitive tribes imposed such exercises, with tests of proficiency, and the successful candidates were formally passed and admitted to full membership in the tribe, with solemn ceremonials, the counterpart of our Commencement exercises. The instruction and training necessary to qualify them for this formal induction was given usually by the "wise men" of the tribe, and aimed at the unity of belief, behavior, and loyalty held essential to the preservation of tribal independence and the maintenance of tribal customs, taboos, and observances. Education, to such groups, was a device for securing social solidarity and conformity.

Reference to this point of view as the predominant one in early philosophies was made in the previous chapter. Except for an occasional dissenting voice in Athens, schools remained subservient to political and religious ends. During the Renaissance the idea of education for independent personal culture and individual development arose, thus beginning a fundamental conflict which has affected all subsequent thought, both as to the functions and the character of education. The conflict between the two great major conceptions of education was strikingly represented in the attitudes of Rousseau and Napoleon, the one just preceding, the other immediately following the French Revolution. Rousseau demanded the extreme of individualism and nature, rejecting all social and institutional heritage or obligation in his educational scheme. A few years later Napoleon, in one of his papers, declared:

"My principal aim in the establishment of a teaching body is to have a means for directing political and moral opinions."

In modern times there have developed minor distinctions within these two great opposing points of view regarding education. Those who regard it as a function primarily committed to the duty of maintaining the existing social order have varying beliefs as to the share which the common citizen should be prepared to exercise in the control of political and social institutions. Consequently, the corresponding types of education carry diverse patterns of democratic universality or aristocratic selectivity. On the other hand, those who emphasize the individualistic aspect of education divide upon questions of criteria and objectives. Such phrases as socialization, indoctrination, efficiency, and individualism are "fighting words," and reflect fundamental conflicts in the conception of education. Much argument has also been expended upon conflicting convictions as to the nature of education, viewed from another standpoint. The basis of this disagreement has turned upon diverse conceptions as to the character of educational growth. These opposing ideas still influence thinking about education so strongly as to warrant attention to them.

Educational growth by accretion and storage. One of the earliest notions as to what happens in the process of education was that the mind, as a storehouse, is gradually filled with knowledge. The ignorant mind, in this conception, is an empty mind, and many figures of speech have been used to suggest analogies of the procedure by which golden grains of wisdom are gathered into the mental granary. Teachers working on this assumption have usually endeavored to be economical of the available space. Having serious misgivings as to the storage capacity of their pupils, instructors have deemed it good management to have the information condensed into as compact and logical form as possible, something like clever filing systems, ready to be tucked away into an appropriate corner. To such teachers, the subject-matter, with its concisely classified facts, is the important consideration. The teacher is the active agent, feeding the material, in carefully divided portions, to the relatively passive pupil. The more docile and receptive the latter is, the better, as that increases the probability of his being able to give back, for exhibition on examination day, the undisturbed and unaltered storage material.

Knowledge has an important place in education, but it cannot be inserted, crammed, pounded, or otherwise directly delivered into the learner's mind. Each individual fact comprising it, unless learned by direct experience, must be constructed by the learner for himself from the imperfect materials at hand. That is to say, the words of instruction, vaguely understood at best, can only serve as suggestive clues to help the pupil recall appropriate experiences of his own by which to interpret the new material. If his experiences have been inadequate, or if inappropriate ones come to mind, only misinterpretation can result. Instructors are often startled at the distorted forms and meanings in which their statements later reappear. Real knowledge must be developed by the pupil himself, through recognition of relationships and verification of inferences in the light of his own experience. The best instruction can only stimulate and guide this. The verbatim reproduction of externally organized material, however plausible it may appear as proof of learning, may be merely the regurgitation of an undigested tablet of knowledge.

Education as mental discipline. Another viewpoint as to the nature of educational growth regards mental discipline as the most important element. Subject-matter is valuable not so much for its direct usefulness in relation to everyday life as for its fitness to provide mental exercise. The wits are to be sharpened upon some good, firm abrasive material, and the various kinds of mental activity strengthened by exercise upon properly resistant subject-matter. Laborious effort, even though unpleasant, is believed to toughen the mental and moral fiber in a valuable way. Mister Dooley elucidated this theory to his friend Hennessy by saying, "It don't matter much what you teach a boy, jist so he don't like it." Certain kinds of subject-matter, long tested and perfectly organized, are believed to have pre-eminent value for disciplinary purposes, and justification for their continuance in the curriculum is sought upon those grounds, regardless of any other question as to their modern value.

The theory was traditionally based upon the psychological notion that the mind consisted of fairly separate faculties, such as memory, reasoning, and the like, each susceptible of independent training. The faculty conception of psychology was entirely discredited some decades ago, and the belief that disciplinary training in one field of subject-matter had any great transfer value for use in another field was vigorously challenged. As a result of the battle waged over the validity of this theory, its proponents no longer state it in such sweeping and dogmatic terms, but its influence is still widely active. A fair appraisal of the extent to which transfer values in training have any basis in scientific proof involves a critical examination of the psychological studies upon that subject. On that account, a more complete analysis of the theory and an evaluation of its claims are reserved for the section of this book dealing with the psychological basis of education, where they can be discussed in a more appropriate setting.

The psychological approach in educational theory. The traditional conceptions of education which have just been noted have been based, in the main, upon logical considerations, from the adult point of view, rather than upon a scientific study of how children actually learn. Modern educational thought has shifted the emphasis to the latter basis. The psychology of learning is taken as the guide for an analysis and restatement of the meaning and character of educational growth. Supplementary studies of society and the necessary relationships of the individual in it are needed to determine sound aims and objectives in education, but the child's own normal reactions must determine the process. For example, it has been found that a logical organization of subject-matter, while an extremely valuable aid to its use and retention *after* it has been learned, does not accord with the psychological processes by which the first steps in learning new material are normally and most effectively taken.

Much of the supposed conflict between individual freedom for development and the needs of organized social life disappears when the issue is approached from the standpoint of normal child development. The more we learn of social psychology, the more we are impressed by the fact that the essentials of social life are, in the main, the projection of the normal individual's desires and demands for expression and are indispensable to his development and happiness. There are, of course, special forms taken by political or other social institutions, the perpetuation of which prompts a deliberate type of educational indoctrination for conformity, but these artificial exaggerations of social imposition do not fundamentally affect the basic fact that the personal and social needs of the individual constitute an inseparable unity. This and similar simplifications will be more apparent as we proceed with our examination of the meaning of education from the standpoint of normal development.

The individual as the starting-point. The human being comes into the world with strikingly incomplete adjustments to his environment. More than all other animals he must acquire after birth and during a long period of infancy the adaptations of behavior and performance necessary to the life he will lead. From his earliest consciousness, the struggle is on to control his environment, physical and social, and make it serve his vague desires. He early learns that such control, at best, is only partial, and that he must compromise, must modify his own behavior in order to attain tolerable adjustment and comfort. These concessions he usually makes grudgingly, reserving a determination to make better terms as soon as he has the power. While this struggle, with its double effect of altering the environment and making over the individual, is most intense during the years of childhood and adolescence, it continues all through life. Out of this give and take, these two-way modifications, come the knowledge, the skill, the emotional changes that represent the total effects of experience and learning. In its largest sense, education is adjustment.

Education as adjustment. As man learns to modify or accept his physical surroundings, and to live on tolerable terms with his social environment, he regards his own necessary adjustments and modified behavior as only tentative. Man's crowning characteristic is his marvelous capacity to be dissatisfied with things as they are. In his efforts to control physical forces and make them minister to his comfort and safety, he discovers facts, records his observations, organizes his knowledge, and cunningly invents devices for extending his power. During the process he has vastly modified his behavior. Instead of a fumbling, discontented victim of natural forces, he is now a scientist. In his dissatisfaction with his social environment which he cannot wholly subject to his will, he learns to co-operate with others in securing safety for himself and his property, he inhibits his turbulent impulses and concedes privileges to others in order to retain his own coveted rights, and he comes to understand something of the conditions under which men can live together to their mutual advantage. In this transformation of his behavior he has left restless barbarism and is on his way toward becoming civilized. He even feels a "divine discontent" with himself and with his spiritual and emotional limitations. He struggles to learn more of beauty and truth, and to express them in finer, more artistic, more satisfying forms. Through this effort he becomes something of a poet, an artist, a philosopher.

We have already paid deference to man's amazing propensity to be discontented. There is another characteristic which should awaken equal wonder: his incredible versatility in making necessary adaptations on his own part. He alters his behavior, revises his thinking, acquires strange new skills, learns tolerance and even patient acquiescence, if need be, as his concessions to the great reciprocal adjustments by which man and his universe are remade. These experiences of change and achievement he covets for his children as a means to their increased security and happiness. Out of the age-long accumulations of social progress he selects such essentials as may be condensed into the experiences of the years prior to maturity. In this way, systematic education seeks to have the child relive, in some fashion, the racial experiences, and make for himself the modifications of behavior and response appropriate to them. The resultant values derived from these controlled and directed learning experiences will depend, at least to a marked degree, upon the realistic mental re-creation of the situations originally stimulating the adjustment, or upon actual situations with comparable impelling elements to influence such response.

Types of behavior adjustment. Up to this time our attention has been divided, in fairly equal degree, between the alterations which man imposes upon his total environment, and the inner adjustments or adaptations which take place in his own behavior. Our major interest, from the standpoint of a philosophy of education, is, of course, in the latter type of change. By noting the nature of the essential types of adjustive reaction and behavior displayed by the total psycho-physical organism, we shall have the outlines of the possible fields of education. The term *behavior* is used, of course, in its broadest sense to include all phases of knowing, feeling, and doing.

One of the most fundamental types of adjustment which the human being must make is biological. He is a living organism, and must learn how to get on successfully under the conditions imposed by nature. Many of these conditions he cannot greatly change, but must abide by their restrictions upon his way of living. Even in the case of those subject to change and control, salutary modifications require directive knowledge. Many deliberate alterations of the physical environment by man have proved unhygienic, and he has found himself biologically maladjusted to the new conditions. Effective biological adjustment calls upon all the resources of the entire psycho-physical organism. Mind is a "survival agency," and largely through his cunning in perceiving relationships and anticipating effects, man has had a distinct advantage in maintaining vigorous existence amid diverse physical conditions. Moreover, the direct effect of thought and emotions upon normal physical functions is well known. All in all, the task of effective biological adjustment to assure healthful and vital living requires the harmonious help of sound habits, well-informed judgment, and calm self-discipline.

Adjustment a lifelong process. Social adjustment is practically a lifelong process, and includes a multitude of varied elements. From birth one is a member of a group, and must learn to get along with others. In varying degrees, each person influences and is influenced by others. The normal individual usually finds his greatest happiness in social companionship, although the possibilities of such happiness are dependent in great degree upon his own adjustments toward the necessities of self-restraint and consideration for others which group association requires, even when the group numbers only two persons. The stimulation and enthusiasms engendered by great co-operative enterprises of civic, scientific, or humanitarian character constitute some of the most stirring and satisfying experiences of life, but demand trained intelligence, sympathetic understanding, and unfailing habits of social response. In a less spectacular and perhaps less inspiring way, the ordinary relationships of the individual with organized society, as he participates in it, have the same satisfactions and rewards, and call for the same group of social adjustments. Fortunately or unfortunately, also, the normal requirements of life call for some useful or productive service from each individual as the price of his economic subsistence. This involves complicated vocational adaptations which, for most vocations under modern conditions, are becoming predominantly and increasingly social in character. In its total implications, the social segment of the educational circle appears to hold major importance.

Another phase of adjustment arises from the necessity of getting on with oneself. Childish tantrums and adolescent outbreaks are only exaggerated expressions of the inadequate inner adjustment which is generally characteristic of childhood, and often continues into maturity. Conflicting impulses, divergent aspirations, and discordant loyalties are at war within, and an orderly progress toward self-control is needed. Integration of personality and emotional adjustment are difficult to attain in those rather extreme cases that obviously need special treatment. Recent studies in the field of mental hygiene indicate a rather general prevalence of states of minor maladjustment, susceptible of guidance and successful solution, but potentially dangerous under the usual "let him fight it out with himself" treatment. Certain social irritations merely serve to aggravate and reveal a condition that is essentially a personality problem. This phase of educational responsibility extends on into considerations of personal development and cultural enrichment, such as are advocated by those who regard individual fulfillment and freedom as the foremost concern of education.

The foregoing comments on typical phases of education as adjustment indicate something of the scope and nature of the processes of modified and remodified behavior which constitute its range. More complete analysis of the bases from which education starts, its justifiable goals, and the means of their attainment belong in later sections. There remain, however, certain corollary considerations and implications which should be included in this general preliminary survey of the current conceptions of the meaning of education.

Education as self-activity. The preceding discussion of education as adjustment suggests the obvious corollary that educational change is wholly a matter of self-activity. There is, however, a very prevalent impression to the effect that education is somehow imposed from without, and that the minds of children are molded by the ministrations and manipulations of their teachers. This belief, reinforced and preserved to a considerable extent by the figures of speech and rhetorical metaphors which have regularly been employed in describing education, tends to confuse and obstruct clear thinking about the processes of learning and teaching to such an extent that we must risk the charge of painting the lily and amplifying the obvious by pointing out the universality of self-activity as the controlling factor in any learning experience.

In a very real sense, all education is self-education. Some reference was made in an earlier paragraph to the operation of this principle in the case of the learner's reconstruction and reinterpretation of instructional statements in the light of the meanings permitted by his own experiences. Without anticipating the more technical psychological analysis of learning procedures, such as belongs in a later section, some familiar illustrations and explanations of the principle should now be taken up in order to clarify and confirm an understanding of the general nature of educational change which will be basic to all subsequent discussion of educational problems in this book.

In the learning activities which are predominantly matters of acquiring physical skill, it is evident that everything depends on the learner's efforts. One doesn't learn to skate or to drive an automobile by watching and listening, no matter how attentively he may do both. These may serve very profitably to give one a clear pattern for performance, but the real achievement can come only by one's own activities, the most important of which are not visible, involving as they do central nervous adjustments and co-ordinations. It has been said that, in order to acquire skill in typing, one must build a typewriter in his brain. This is a dangerously metaphorical way of emphasizing an important truth, that the building, by patient repetition, of inner nerve-controls is an indispensable phase of mastering skills. The kindly teacher who holds and guides the hand of the beginner in the writing lesson probably overestimates the benefits of the help. It may assist the learner to get a certain feel of the sequence and movement, and thus supplement the visual image as a pattern, but it can no more serve as a substitute for self-propelled practice than one can learn to draw circles by riding on a merry-go-round.

Basis of all learning. The obviously indispensable and determining service of self-activity in producing the more objective educational outcomes, such as skills and habits, is not so readily apparent, at least to the uncritical mind, in some other phases of learning. Popular comment insists that most persons let others do their thinking for them, and accept ready-made the beliefs, standards of taste, appreciations, and sentiments of their social leaders. Napoleon's scheme for "directing political and moral opinions" is assumed to reflect the literal possibility of handing out such finished products to passive learners. This point of view regarding the acquisition of beliefs, information, and prejudices is so widespread, and affects in a confusing way so many educational assumptions, that some clarification seems necessary. We are inclined again to offer a half-murmured apology for dwelling on what the psychologist regards as obvious, but the importance of clearing away at the outset any confusing misconceptions as to the processes of educational change seems to justify meticulous care in setting forth simple basic principles and emphasizing their application to all educational outcomes.

In supplementing what has already been pointed out regarding the necessity for the reconstruction and personal interpretation of every item of information in terms of the learner's often inadequate experience, attention should be called to the operation of this same principle in the higher fields of thought. If we trace the path of human thought back to the shores of Galilee, we find at every turn the tragic figures of great teachers and leaders whose followers have apparently accepted fully the lofty thoughts and precepts of their teacher, but have later betrayed in their own behavior how distorted and misconceived were their interpretations of his words and philosophy. Even the world's greatest Teacher could not prevent his disciples from misconstruing his simple utterances, and building in their own minds diverse conceptions to agree with cherished prejudices and perhaps unconscious presumptions. Each individual in his thinking and problem-solving accepts the easiest solution that can be made to harmonize with previous convictions and values. Clearer thinking must start with the modification of prejudicial obstacles. That must come from within. William James once said, "If you would be free, you must *think* yourself free," a statement itself often misinterpreted. In his meaning, thinking is a very active process, which achieves freedom for the individual when he faces honestly and resolutely the obstructing barriers of inner prejudice and clears the way for mental liberation. Any change in thinking which education can bring about must come through stimulating the inner activity which reconstructs or interprets experience so as to meet satisfactorily the new situation which occasioned the problem.

Closely related to, and even blending with, the mental responses and outcomes just discussed are the more emotionalized items, such as loyalties, aversions, enthusiasms, and appreciations. These have great educational importance, and are characterized by the predominance of the emotional over the intellectual elements. To the extent that appreciations are esthetic and depend upon sensitivity to color, tone, harmony, line, or rhythm, these are of course individual and unique, depending upon the peculiar emotional quality of one's responses to sense-stimulation. It is equally true that those emotional elements which fasten upon ideas, beliefs, personalities, and relationships are produced from within by emotional experiences. Veterans, returning from the World War, brought back intensely emotionalized attitudes, not dictated or imposed from without, but created from their soul-stirring personal experiences. Illustrations might be multiplied, but no more should be needed to establish the principle of self-activity or inner responses as the source of those changes and adjustments which education seeks to bring about in all types of mental life and behavior.

If justification is needed for this extended discussion, it is to be found in the fundamental importance of this general principle as a basic consideration in a philosophy of education. Its full recognition shifts the focus of thought from external factors to the learner himself. Its implications underlie the most significant developments in modern educational procedure. Its constant prominence in the foreground of educational vision helps to stimulate continual search for those motives, materials, and situations most conducive to calling forth the learning activities essential to the educational ends sought.

How may education be directed? In our conception of education as adjustment, arising from an inner urge and characterized by type responses which result in permanent modifications of behavior, we must recognize also the reciprocal part played by the environment and stimulus-situations. Adjustment implies the interaction of two factors. In learning, one of these factors is ordinarily external, the other internal. To the extent that the inner response bears a definite relationship to the provocative situation, altering the situation will alter the response. One situation or set of circumstances will call forth eager responsive activity; another will incite hostility, evasion, or defensive inhibition. Mental reactions and adjustments, affected as they are by a complex group of factors most of which can be only vaguely guessed by the teacher, can never be wholly directed from without. The analogy of the locomotive, moving forward under its own power, yet having its route guided by the switchman's levers, may have illustrative value, but suggests far greater control than can be assured in directing educational adjustment.

Although control of the environment does not guarantee the desired responses, far-reaching and impressive results are nevertheless regularly secured, and upon this fact education relies. The fundamental principle of an educational curriculum is the selection of materials along with the planning of situations, activities, and sequences, so that from the learner's reactions to these organized experiences will accrue significant information, useful habits, and such emotionalized outcomes as are considered essential to personal culture and social participation. Haphazard, unselected situations, the "school of hard knocks," occasionally produce special types of competency, but at distressing costs, especially when the numbers of disastrous failures are considered. Society prefers, through organized education, to select the situations to which adjustments are to be made by the learner so as to assure better range, variety, and quality of experiences. Similarly, the underlying purpose of school organization and methods is to provide favorable environment, sympathetic guidance, and stimulating relationships under which the educative experiences may occur, to the end that the most appropriate adjustments may result, and with the greatest economy of time and effort consistent with reasonable security and freedom from vicious influences.

TOPICS FOR DISCUSSION

1. It is generally agreed that certain geographical areas are more conducive to the development of civilization than are others. Interpret this statement in the light of education as adjustment through self-activity.
2. It is frequently remarked that man has been far more successful in his adjustments to and control of his physical environment than in his solution of social problems. Try to account for this, and indicate its importance in our conception of education.
3. What is the educational importance of man's prolonged period of infancy?
4. Explain the statement that mind is a "survival agency" in biological adjustment.
5. Give examples to show how one's beliefs and prejudices result from his own activity.
6. "Sensitivity to maladjustment provides the stimulus and sets the limits to all educational progress." Explain and criticize this statement.
7. What advantages may the school as an environment possess over the ordinary conditions by which a child's total behavior would be modified? What disadvantages?
8. To what extent should education still be considered "a device for securing social solidarity and conformity"?
9. How do you account for the traditional and still widely prevalent conception of education as mainly a storage process?
10. Do you accept the general statement that the learner regards all his adjustments as tentative compromises? Illustrate from your own experiences.

SUGGESTED EXERCISES FOR STUDY AND DISCUSSION

1. Indicate whether the following educational concepts tend to be *social* or *individual*, and whether you consider them *definite* or *vague*: use letters S or I, and D or V. Verify your responses.

—— —— to dispel error and to discover truth (Socrates)
—— —— attainment of virtue in the individual (Plato)
—— —— attainment of happiness through perfect virtue (Aristotle)
—— —— the development of characters (Quintilian)
—— —— dominance of man over things (Roger Bacon)
—— —— development of a free, enlightened personality (Petrarch)
—— —— development of moral character (Ascham)
—— —— preparation for ordinary duties of life (Luther)
—— —— advancement of human knowledge (Rabelais)
—— —— development of the whole man (Comenius)
—— —— attainment of a sound mind in a sound body (Locke)
—— —— the formation of habits (Rousseau)
—— —— development of all the powers (Pestalozzi)
—— —— many-sided interest (Herbart)
—— —— preparation for complete living (Spencer)
—— —— understanding the world in which one lives (Huxley)
—— —— self-realization (Dewey)
—— —— mastery of tools indispensable to the race (Moore)

2. Indicate whether the following statements are true or false, and verify:

T. F. Education of women required a narrow meaning of education.
T. F. Progress from Socrates to Dewey can be best measured in terms of changed educational concepts.
T. F. Experience is a poor test of values.
T. F. Educational concepts have been narrowed by compulsory attendance.
T. F. The value of school education is the extent to which it creates a desire for continuous growth. (Dewey.)
T. F. Education can have no other meaning except as it represents the highest ideals of society for the individual acting his part faithfully in the concrete affairs of his day. (Bode.)
T. F. Academic freedom of speech has no place in the school.
T. F. Educational concepts must be constantly reconstructed.
T. F. An ultimate aim is more meaningful than an immediate aim.
T. F. Professionalism tends to separate from the social process.

T. F. The slavish dependence upon textbook education is increasing.
T. F. Education has a self-preservation value.
T. F. Nothing is so complete that it cannot be improved.
T. F. The term "liberal education" has historical significance only and no present-day applicability. (Moore.)
T. F. Moore's suggestion that the sciences be renamed as nouns participal in place of the present noun substantives is without point.
T. F. Knowledge about is superior to knowledge of.
T. F. The intellectual life of man consists almost wholly in his substitution of a conceptual order for the perceptual order in which his experience originally comes. (James.)
T. F. Service is a better measure of success than happiness, knowledge, self-development, or wealth.
T. F. Education for early youth should be more physical than emotional, intellectual, moral, or spiritual.
T. F. Educational meanings evolve from experience.
T. F. A real educational concept requires that the school as well as the individual must be plastic.
T. F. Education is something to be done to children.
T. F. The idea that education is preparation for future life should be stressed.

SELECTED REFERENCES FOR ADDITIONAL STUDY

Bolton, F. E. *Principles of Education*, chaps. I and II.

Published a quarter of a century ago, but still valuable for its discussion of the meaning of education, the important factors contributing to it, and the character of the changes involved.

Childs, J. L. *Education and the Philosophy of Experimentation*, chap. VI.

Not easy reading, but an interesting and stimulating discussion of education as the development of personality.

Dewey, John. *Democracy and Education*, chap. V.

Throughout this book are found interesting revelations of Dewey's conception of the meaning of education. Chapter V gives perhaps the best and most helpful discussion in brief form. The language requires careful reading.

Doughton, I. *Modern Public Education — Its Philosophy and Background*, chaps. III and IV.

Gives a discussion of the child-centered meaning of education and its significance. Has a good list of readings.

Horne, H. H. *This New Education,* chaps. VI and VII.

Discusses the theory of education in a democracy, with the obligations implied as to form educational relationships should take. Then follows a critical list of characteristics belonging to an educated person.

Kuehner, B. A. *A Philosophy of Education,* chap. VII.

Gives selected quotations on values of life and aims in education.

Moore, E. C. *What is Education?*

An enjoyable philosophic appraisal of various theories as to the meaning of education.

CHAPTER III

PHILOSOPHIES OF EDUCATION

Philosophy is not a mysterious and abstruse subtlety confined to the intellectual elite. It does not connote the mere loving of wisdom. Anyone who employs knowledge and experience in determining a course of action in a given situation is thereby, consciously or unconsciously entering into the realm of philosophy. Philosophy is as old and universal as mankind itself. Peoples everywhere from the beginning have searched into the reason and nature of the things of their environment, arrived at certain general conceptions, and attempted to apply these to their daily conduct of life. Philosophy is especially concerned with a systematic view of relevant facts (and in the absence of facts with the best possible guesses), with their interpretations, and with their implications for the problems of living.[1] There are, therefore, as many individual philosophies as there are persons who reason and determine their course of action in terms of their knowledge, and as many schools of philosophy as there are deliberate and logical systems of living with sufficient general appeal to attract a respectable following of the like-minded who desire to articulate their lives in accordance with the principles advocated. Every person who goes beyond mere existence and attempts to live most fully has a philosophy.

[1] Philosophy has frequently been taken to be practically synonymous with metaphysics or theology, and, in this narrow sense, limited to a consideration of the nature and cause of being and the existence of God. In this connection, it has sometimes been referred to as the science of the supersensible. The medieval concept of philosophy was broader and embraced all the liberal arts. The academic degree of doctor of philosophy was devised, then, to indicate mastery of any of these arts or sciences. A more general meaning has been the systematization of knowledge and concepts, with implications of their practical application. From this viewpoint, we have the philosophy of art, conduct, *education*, mathematics, music, and so on. In the very broadest sense, any attempt to work out a systematic view of things is a philosophy.

Philosophies of education are but that part of the more general philosophies of life which pertain to the educational process. They are concerned primarily with the *aim* of education, the *program* of education implied in the achievement of the aim, and the *examination* and *evaluation* of educational organization, content, methods, teacher-preparation, measurement, and the like, in terms of the goals and ideals set up. They are not different in their nature from any other kinds of philosophy except in the fact that they are mainly concerned with the systematization, interpretation, and practical implication of knowledge and experience as it has to do with the field of education.

It is obvious that philosophy and education must be intimately related and, in fact, interdependent. Philosophy is dependent upon education for its formulation as well as education upon philosophy for its guidance. All the great philosophers writing on education from Plato on down planned their educational theories as applications of their respective philosophies. Thus, while a certain philosophy contributes to certain educational objectives and methods, these, in turn, promote the particular philosophy. It frequently happens that the derived principles, doctrines, and theories of education tend to overshadow the philosophy upon which they are founded, and this situation should not disturb the student. It is after all the educational theories and principles growing out of a particular philosophy that have immediate and significant educational influence.

How philosophies of education are conditioned. Philosophies of education are conditioned by existing knowledge, by the dominant social ideals of the particular society, by the selfish interests of small but influential privileged classes, by the personal experiences and vision of educational statesmen and leaders, and by individual temperament. The conditioning knowledge is derived mainly from those vast fields of learning commonly classified as biological, psychological, sociological, and historical. It is from the biological and psychological knowledge that the concepts of the nature of the individual as a learner are formed, and from the sociological and historical facts that notions of the social group in which the individual lives and is educated are developed. Philosophies of education are influenced by the accumulation of information in these fields of learning. These fundamental bases of education are discussed in Part II.

Philosophies of education are also sensitive to the social ideals of the particular society in which they are evolved. In ancient Sparta the social ideal was to be a good soldier, and Spartan education conformed to this ideal by stressing robust physical development and severe military training. In Periclean Athens the effective citizen was the persuasive orator, and Athenian education emphasized public speaking and debate. Medieval Christianity centered on the hereafter, and Christian education of the time was devoted to the preparation for life after death. The educational aims and programs of modern nations are definitely determined by the various social, political, religious, economic, and other ideals; and these aims and programs are subject to modification and restatement as the different factors of social life change. The influence of privileged classes in maintaining a type of education best suited to their own advantage is evident throughout the history of civilization down to the present day. Then, too, philosophies of education are conditioned by the personal experiences and vision of certain outstanding and influential members of the social group. The direction these more or less individual philosophies take usually depends upon the philosopher's concept of the nature of the individual, the world, and the relationship between the two. His ideas of these matters, although influenced by, may be at variance with the generally accepted opinion of the social group and far ahead of the time in which he lives. As everyone knows, an individual's temperament[1] is a major factor in coloring his thinking and in determining his philosophy of life. Some crave action and are extremely discontented unless they are influencing society, in a very practical manner. Others are reflective and are more concerned with an attempt to explain the whence, whither, and why of existence, for the sake of the knowledge itself and without any ulterior motive of a practical nature. It is from this latter group — the temperamental thinkers — that systems of pure philosophy develop, and it is to them that we turn for our major philosophies of life and of education.

Major philosophies. Pure philosophy is a persistent attempt to gain insight into and explain ultimate reality, the primal causes of existence, the final goals of the universe, the basic nature and import of the world and of ourselves, and the like, by means of systematic reflection. It is intellectual curiosity or wonder that compels men to philosophize. When the individual relieves his tension by an explanation satisfactory to his temperament and experience, he is apt to consider persons with opposite views of the universe as out of tune with the harmony of things and sometimes even as incompetents. We have, therefore, philosophical antagonists. One difference of opinion may be as to whether ultimate reality or causation in the universe consists of only one form (monism), is twofold (dualism), or is composed of several independent forms (pluralism or multiplism). Monism, the belief that all phenomena is reducible to a single ultimate constituent or agent, has been most generally accepted.[1] This concept is the more *satisfactory* to the apparent human craving for simplicity and straightforwardness. Monism is sometimes referred to as philosophical unitarianism.

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[1] William James in his *Pragmatism* stresses temperament as a factor in all philosophizing, and points out the tendency of philosophers to rationalize their desires and to build up the kind of universe which suits their temperaments. He refers to Plato, Locke, Hegel, and Spencer as examples of temperamental thinkers. He classifies intellectual temperament as of two kinds, the "tender-minded," who are devoted to abstract and eternal principles, and the "tough-minded," who love facts in all their crude variety. The tender-minded are rationalistic (going by principles), intellectualistic, idealistic, optimistic, religious, free-willist, monistic, and dogmatical; and the tough-minded are empiricist (going by facts), sensationalistic, materialistic, pessimistic, irreligious, fatalistic, pluralistic, and skeptical. Except for the men of marked radical idiosyncrasy, most individuals have a mixture of these counterbalancing ingredients.

Among those who believe that ultimate reality can be reduced to one form (monists), there are naturally differences of opinion as to the precise nature of that one form. There are two main schools of thought concerning this philosophical problem. There are those who hold that mind or spirit is the ultimate reality (idealists), and that matter and its phenomena are but modifications of this mind; and those who believe that matter, or things in time and space, is the ultimate reality (materialists), and that mind can be resolved into and explained by matter.[2] As would be expected, there are those so constituted temperamentally that they cannot accept either idealism or materialism (skeptics), who maintain that the human mind is incapable of determining ultimate reality and must be satisfied with things just as they appear in nature; and others who, while they feel that absolute knowledge about ultimate reality is impossible, are willing to accept unproved and unprovable theories as workable assumptions and explanations of facts (agnostics). Skepticism and agnosticism as such are of minor importance to students of education. Their interest in the realm of philosophical speculation is confined mainly to *idealism*; materialism or *naturalism*, as we shall call it; and the mediating system of philosophy called *pragmatism*, a term which William James defines as "a new name for some old ways of thinking." We shall discuss briefly these three major philosophies and indicate some of their educational implications.

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[1] Descartes and Kant are outstanding examples of dualists, but even they had monistic leanings toward idealism.

[2] There is another group which asserts that mind and matter are identical — merely two aspects of the "mind-stuff" substance; and that mind, matter, and their phenomena are different manifestations of this one substance. The substance theory of Spinoza is an example of this view. This is perhaps an effort to reduce dualism to the more popular monistic view.

Idealism in education. Idealists believe that the true or the real is essentially spiritual or mental in nature, and that the objective universe is but an observable embodiment of mind. It would be more accurate to refer to them as mentalists or spiritualists. Since the term is derived from Plato's metaphysical doctrine that ultimate reality consists of ideas, idea-ism with the "l" inserted for euphony has become the accepted term. Idealists disagree among themselves all the way from a mere affirmation of the dominance of mind in reality to the dogmatic assertion that reason and consciousness compose the very essence and complete nature of reality. Their differences of opinion may be grouped further according to the extent to which they hold that "subjectivity" is the only source of our knowledge of things. So we have a long and famous list of philosophers who may be classified as idealists but who have different meanings for their idealism. Among these may be mentioned Berkeley, Descartes, Fichte, Hegel, Hume, Kant, Plato, Schelling, Schopenhauer, Socrates, Spinoza, and others.

Differences in philosophical theory and speculation are of interest mainly to students of pure philosophy. A statement, however, of a few idealistic principles gathered from various sources are presented here for the information of the student of education, with the hope that in some of them educational implications will be discovered:

> True reality is spiritual or thought.
>
> Nothing exists except what exists in the Absolute Mind of which our finite minds are a part.
>
> What mind projects into the world is the only reality.
>
> The external world is only a landscape painted by our minds and spirits.
>
> Ideas and purposes are the realities of existence.

> Personality, the union of ideas and purposes, is the ultimate reality.
>
> The intangible values are the ultimate and eternal realities.
>
> The aspects of life which are of supreme moment are thought, knowledge, art, morality, and religion.
>
> Ultimate being, which explains all other beings, is mental in nature.
>
> Mental life alone is knowable.
>
> The self knows and can know nothing but its own modifications and states.
>
> Self-determination is the essence of true being.
>
> True reality cannot be reached through our senses.
>
> The true method of obtaining true knowledge is by the speculation of our reason, our mental or spiritual vision.
>
> The supreme form of speculation is intuition.
>
> Apparent self-sufficiency of nature is illusory.
>
> Material and physical universe known to science is an incomplete expression of reality.
>
> The distinctiveness of man's nature which differentiates him from other animals lies in powers which issue in the form of intellectual culture, art, morality, and religion.
>
> Man's powers lie beyond the range of positive sciences, that is, biology and psychology, and raise problems which only philosophy can hope to solve, and thus make the only satisfactory basis of education a philosophical one.

It will be seen from the above that the idealist tends to be more interested in and influenced by abstract principles than practical considerations. The value of idealistic speculation in helping man in the solution of his individual and social problems can well be left to the student's own contemplation and temperament.

Contributions of idealistic educators. Brevity of discussion requires that we pass over the contributions of the classic idealists, Socrates and Plato. They were famous educators as well as philosophers. Their educational contributions were of the highest order and still have great value. We shall limit ourselves to those later idealistic educators whose work has been of vast value and of immediate importance in influencing Western education during modern times, namely, Comenius, Rousseau, Pestalozzi, Herbart, and Froebel. Since idealism considers education as a means to an end rather than an end in itself, the educational contributions of idealism are mostly in terms of the organization and procedures provided for preparing and perfecting the individual for the ideal social order and the ultimate good life.

Comenius, an idealist and a Moravian bishop, stressed a proper attitude toward God as the aim of education, but he at the same time included a practical knowledge of the world and of mankind in his educational philosophy. He stands in a transitional position between the dominant religious aims of church education and the approaching secular aims of later educationists. By that fact he became the father of modern education. In his educational classic, *The Great Didactic*, in which his educational doctrines in support of his own philosophy are given, he outlines a ladder plan of graded education. According to this plan it is the duty of every mother, for the first six years, to give attention to and encourage the child in the development of varied interests. During the next six years the child should attend a school in the vernacular where his interests are given plenty of free play. Those with higher aspirations than possessed by the common masses should spend an additional six years in further study at a Latin school. The few of these who pass a rigid examination should spend six more years at a university. As a climax, Comenius provided for the establishment somewhere in the world of a College of Light where the most learned of all nations could pursue their educational ambitions to their complete satisfaction. In all his many writings it is clear that he was guided by the fundamental principles that instruction should be graded and follow the order of nature, that the interests of the child should be capitalized, that the child's understanding should be reached through his senses, and that learning should have an apperceptive basis. The germ of much of our modern educational theory is found in Comenius's philosophy of education.

Rousseau, whose philosophy included an interest in the welfare and improvement of the common people, and in providing a more natural life for the children of the upper classes, presents his educational doctrines in his great classic, *Émile.* In this he makes a plea for the rights of the child, stresses an education based on natural desires and instincts, and gives many suggestions for carrying out his propositions. His philosophy demanded the study of children and the teaching of the child, rather than the study of books and the teaching of subject-matter. His educational plan was almost entirely negative for the first twelve years of the child's life. During this time contact with books and social groups were to be avoided. Nature and a rural environment were to be the educating factors, and the child's conduct was to be determined by the natural consequences of his own activity. A minimum of human stimulation was to be provided along the line of sense discrimination, drawing, and unaffected speech. For the next three years provision was made for reading Robinson Crusoe, studying neighborhood geography and natural sciences, and learning a trade. This was followed by five years of socialization through the study of history, community visitation, and play activities. Rousseau, while idealistic, was oftentimes inconsistent. Many of his doctrines, as with other idealists, would be acceptable to the naturalistic and the pragmatic schools of philosophy. In the different schools of philosophy, some of the educational implications and practices are the same or similar. Educational philosophers may do the same things, but for different reasons.

Pestalozzi was imbued with the idea of the child's being the center of the educational process. He was convinced that education in reality was a development from within the growing child, rather than an adult imposition from without; that through observation and experimentation educational principles could be discovered; that interest on the part of the learning child was fundamental to successful teaching; and that the earliest years of childhood were sufficiently important educationally to deserve careful consideration. Pestalozzi held that education was the birthright of all and that its aim was the "natural, progressive, and harmonious development of the powers and capacities of the human being." For accomplishing this aim he reduced all subjects of study to their lowest A B C elements and taught these in carefully graded steps, made a direct appeal to sense experience through object-lessons, and laid stress on the importance of oral instruction. This procedure demanded thorough teacher preparation both in subject-matter and in skillful methods of teaching.

Herbart conceived the purpose of education to be moral character based upon a broad interest in people and in things. His subject-matter content for this moral instruction appropriately stressed history, literature, science, and mathematics. Herbart's psychological doctrine of interest was fundamental to his whole educational philosophy. He did not believe that real educational changes in a child were possible unless the child himself was thoroughly interested in the activity. Out of this general principle he derived several subordinate doctrines. His doctrine of apperception stressed the dependence of a child's interest in an activity upon its being presented in terms of the child's past experiences. His doctrine of correlation emphasized the intermingling or correlation of school subjects as required in actual life situations, and the avoidance of isolated subject-matter teaching. Out of this sound doctrine was later formulated by others the rather fantastic theory of culture epochs. In an attempt to devise a method of teaching which would parallel the psychological order of learning, Herbart developed the well-known formal steps of instruction: preparation, presentation, comparison, generalization, and application.

Froebel was most idealistic in his philosophy. He believed that the individual's potentialities existed in a dormant state in his original nature from childhood, and that it was the function of education to awaken these latent powers and stimulate them to their fullest possible development. Proper educational procedures had therefore to conform with the natural laws of inner growth. From his educational philosophy he arrived at his law of unity and his strange symbolism. He reasoned that since the source of all created things is God, there must of necessity be unity among all created things, within the development of the child himself, and among the mental faculties of knowing, feeling, and doing. From this he concluded also that education actually begins before the birth of the child. In the divine plan he discerned a symbolism which to him meant that behind all activities there existed implicit spiritual meanings and values. Out of this symbolistic concept Froebel developed the theory of self-activity as the method of instruction, and stressed the importance of creativeness on the part of the child in his education. He felt that a social environment was essential to the educational process and that the school should be a miniature society. His philosophy accounts for his educational practices and contributions in the way of the kindergarten, play and handwork in education, and nature study.

Naturalism in education. Naturalism, as opposed to idealism, subordinates mind to matter and holds that ultimate reality is material, not spiritual. It asserts that nature, the existence of things in time and space subject to a system of causal laws, sufficiently accounts for all the facts and phenomena of the universe. Naturalists have held different opinions as to what in their last analysis the material things in time and space are. The earliest ones, the materialists or atomists, believed that they were atoms in motion, and sometimes even explained the soul as a fine material substance and the phenomena of mind as a vastly complex motion of atoms composing the brain. Later ones, the energists, reduce everything to a form of energy; most recently to positive and negative electricity, electrons and protons. Others, the positivists, are unwilling to conjecture about the ultimate stuff of which things are composed, but believe that, whatever it may be, it is causally arranged with other things in such a way as to be observable in some one of the positive sciences. This group deals only with positive facts and the natural phenomena of knowable things, and considers anything beyond this as useless. Naturalism asserts that scientific knowledge is final, and that basic concepts regarding basic substance will change with the advancement of science. Among the great naturalistic philosophers have been such noted thinkers as Aristotle, Comte, Darwin, Democritus, Diderot, Haeckel, Hobbes, Thomas Huxley, Lamarck, Locke, Lucretius, Karl Marx, and Herbert Spencer.

As in the discussion of idealism, a few naturalistic statements or principles are given here for the student's general information and for a consideration of educational implications:

> Everything comes from and returns to nature.
>
> Unchangeable natural laws do or can explain adequately all phenomena.
>
> The only true explanation of reality is furnished by the natural sciences.
>
> Knowledge and truth must be based on the experience of our senses.
>
> Science alone provides knowledge.
>
> The world is a great machine.
>
> Moral instinct, innate conscience, other world, personal

> immortality, miracles, providence, power of prayer, freedom of will, are illusions.
>
> There is no absolute good or evil.
>
> There are no innate concepts or principles constituting the foundation of all knowledge.
>
> Thought is the subtle working of cerebral tissue and nerves in response to various physical stimuli and is wholly dependent upon our physical structure.
>
> Mind is an incident in the process of evolution, contingent upon a highly developed nervous system in the higher animals.
>
> All metaphysical discussions, no matter how profound and involved they may be, are in the last analysis nothing but language responses and linguistic habits derived from other habits.
>
> The study of the human mind, until very lately a part of philosophy, has now been separated from philosophy and has become the science of psychology.
>
> The material conditions of man's earthly life have been changed through scientific discoveries and mechanical inventions.

As the student will see, naturalism is a philosophical generalization of science. One can accept the contributions of science without necessarily attempting to explain by the facts of science ultimate reality, truth; the whence, whither, and why of life and the universe, and the like. But at least such pure philosophical speculations as one may care to make in these unknown fields must harmonize with scientific facts if they are to be adequate explanations.

Naturalism tends to be characteristic of modern life. This is inspired by the great progress and popularization of natural science during the recent years, the theory of evolution, and the development of the scientific concept in education. The trend toward science in education was apparent in the work of the idealistic educators from Comenius onward. But the developments in pure and applied science during the nineteenth century gave science in education its greatest impetus.

It then came to pass that any acceptable philosophy of education was compelled to give scientific content and method an important place in its general concepts and practical applications. European countries began adding more and more scientific content and methods to the work of the elementary and secondary schools and in the universities. In America, physiology, elementary science, and nature study were added to the common school curriculum; scientific studies on a laboratory basis were introduced into the secondary schools; and special scientific schools and courses were established in institutions of higher learning. A new scientific concept of education was in process of formulation, and the population was on the way to becoming science-conscious. As a result, present-day naturalism and idealism have more in common and are closer together educationally than they were in their purely philosophic and historic setting.

Contributions of naturalistic educators. No man ever stood as a greater educational authority than the naturalistic educator Aristotle, nor for so long a time. We cannot, however, take time here to discuss his educational aim of developing man's nature for rational living, and the educational organization and content by which he set out to accomplish his aim. His doctrines dominated education for several hundred years. We must pass over the naturalistic thinker, John Locke, too, except to point out a few of his most important thoughts on education. He considered learning less important than physical and social training, held that sense impression is the beginning of clear ideas, believed that methods of teaching should be made pleasant, stressed mental power as more important than knowledge, pointed out that reason is the chief faculty to be developed, and gave impetus to the mental discipline theory of education which became an important factor in educational content and procedures. He believed in "a sound mind in a sound body." He believed in studying the foreign languages by the conversational method and for purposes of travel. His educational views were extremely practical for his time.

The outstanding exponent of science in education during modern times was Herbert Spencer. In his philosophy he took the position that the aim of education was preparation for complete living, the knowledge most worth while for this was science. As a useful procedure he resolved complete living into five major fields of human activity: physical well-being, vocational efficiency, parenthood, citizenship, and enjoyment. The ethics of naturalism tends to be hedonistic, that is, pleasure is the sole or chief aim in life. In each of these fields Spencer concluded that the knowledge of most worth is science, and gave a fundamental place to the subjects of biology, chemistry, physics, physiology, psychology, and mathematics. In addition to the content value of science, he believed in its superiority for developing such intellectual powers as memory, judgment, understanding, self-reliance, verification, and religious consciousness. His classification of the fields of human endeavor provided the basis for the current cardinal principles or objectives of education discussed in Chapter IX.

Modern educational psychology and sociology are naturalistic. Naturalism gives rise to the theory that sound psychological progress depends solely upon observational and objective methods, eliminating or minimizing the bias of the psychologist. This psychological theory and method is known as behaviorism, the child of naturalism, and is discussed in Chapter VI. The scientific study of society, sociology, is also the child of naturalism. The biological basis of education discussed in Chapters IV and V, eugenics, euthenics, mental testing, and the like, are all naturalistic. Naturalism has been criticized for its tendency to ignore spiritual factors, but the result of approaching philosophy from the scientific standpoint and education from the biological standpoint has been most helpful and stimulating to educators and teachers.

Pragmatism in education. Pragmatism is the outgrowth of a mediating attitude of mind between the conjectures of traditional idealism and those of naturalism. It protests against impersonal interpretation of existence by naturalism on the one hand, and revolts against academic and orthodox absolutism of idealism on the other. It agrees with idealism in its emphasis upon personality, but takes a more exclusive view than the universal one held by idealism. It is critical of both idealism and naturalism for being monistic. It is the child of idealism trying to make the best of both material efficiency and idealistic tendencies, and is perhaps a step on the way to a new idealism. Pragmatism asserts that the test of truth lies in its practical consequences, and that the purpose of thinking is to arrive at general principles of conduct. Several concepts of what is practical and satisfactory have developed. The best-known has been the humanistic pragmatism which holds the true to be that which best satisfies human nature *as a whole*. The experimental type maintains that whatever can be experimentally verified, whatever works, is true. To find out what is true by necessary experiments based on scientific laboratory methods is a significant educational idea. The kind of pragmatism now dominant and expressive of our times is the biological, often called instrumentalism because it stresses thought as an instrument and its function as adapting the human organism to its environment. Academic philosophers and ecclesiastics have not on the whole taken to pragmatism. They desire a system of philosophy which will definitely and ultimately establish the nature of man and the universe. Pragmatism is too pluralistic, relativistic, temporal, and tentative for them. The most noted pragmatists include James, Schiller, and Dewey.

Although the pragmatists have been relatively few, their influence has been exceedingly great and widespread.

Again as we did in the case of idealism and naturalism, we give for the student's consideration a few pragmatic statements compiled from a variety of sources:

> Whatever fulfills my purposes, satisfies my desires, develops my life, is true.
>
> Popular belief has always tended to estimate the worth of a man's mental processes by their effects upon his practical life.
>
> The theories that work are true.
>
> Human efforts are of crucial importance.
>
> All systems of ideas are relative to the situation in which they arise and the personalities they satisfy, and are subject to continuous verification by consequences.
>
> Results are always concrete particulars. Universals are names for particulars to which results may lead.
>
> The particulars we meet are mostly sense data. Life is a forced adaptation to an indifferent environment. Knowledge and religion arise from real, perilous, and doubtful exigencies of life.
>
> Don't seek to solve a problem until you know what you mean by it; otherwise you will be involved in servile submission to verbal abstractions.
>
> Biology has taught us to regard man as a psycho-physical organism, and his thought as an instrument for adjustment in any situation where difficulties and problems have arisen.
>
> Experiences are diversified and are changing.
>
> To set up a final, unchanging, eternally valid system would destroy its value as a tool.
>
> For philosophic purposes the biological imagination as distinguished from the logical, physical, and introspectively psychological, should be employed.
>
> The hope for better things lies in the continued operation of the forces that are even now yielding good things.
>
> Pragmatism combines naturalistic hypothesis with idealistic conclusions.
>
> The prime function of philosophy is that of rationalizing the possibilities of experience, especially collective human experience.

The student will recognize in the above statements a sort of compromise between the system of absolute ideals and values of the idealists and the all-important natural laws of the naturalists.

Contributions of pragmatic educators. Pragmatism has had an exceedingly large influence upon educational concepts and practices all over the world. The two outstanding pragmatic educators have been William James and John Dewey. James accepted pragmatism as a means of harmonizing science and religion, and as a basis for a sound philosophy of education. He stressed the functional nature of mental activity and the instrumental character of knowledge. He held that it is what they do rather than what they are, which gives meaning and value to art, government, law, religion, science, and the like; that the mind is constantly choosing between alternatives (beautiful and ugly, good and evil, right and wrong, true and false) and it is the consequences which makes the choice good or bad. While James is primarily a humanistic pragmatist, in his *Talks to Teachers on Psychology and to Students on Life's Ideals*, he recommends to them pragmatism in its biological concept. His thesis is that man is primarily a practical being whose mind is given him to aid in adapting him to this world's life. He gives as his reasons for this fundamental concept such considerations as these: human and animal psychology become less discontinuous; mental action is conditioned by and runs parallel with brain action; useful products of the brain are more essential or more primordial than functions not directly connected with this world's environment (ethical utopias, etc.); and "unpractical" activities may be more closely connected with our adaptation to environment than appears. Some of James's writings have become educational classics, especially his essay on habit.

Pragmatism is typical of American life, and its greatest exponent today is John Dewey. Dewey is a biological pragmatist who has extended the philosophy of James to an interpretation of social institutions, and especially to a redefinition and redirection of education. He is the foremost interpreter of education in modern times and has, more than anyone else today, thought out and stated a philosophy of education acceptable for our complex and changing civilization. For him the aim of education is the development of a social efficiency by means of which one is able to join freely and fully in the shared or common activities of life. He believes that the educational aim is acquired chiefly through participation in the activities of the public school. The ideal school should be a miniature of society (but with the advantages of a simplified, purified, broadened, and graduated social environment) in which the child can be taught to live, work, and utilize his capacities amid the complexities of modern social life. In this process, Dewey maintains that education for the child is life rather than a mere preparation for life, and accordingly stresses practical content with a close tie-up between school activities and life situations. To him, the child is a growing, changing personality, the school an instrument to facilitate this growth and change, and teaching and learning processes of communication and participation. He draws heavily upon the psychological and sociological bases of education, and the acceptance of his philosophy has tended to socialize and psychologize education.

A clear statement of Dewey's educational philosophy is made by Cubberley[1] as follows:

> Education, therefore, in Dewey's conception, involves not merely learning, but play, construction, use of tools, contact with nature, expression, and activity, and the school should be the place where children are working rather than listening, learning life by living life, and becoming acquainted with social institutions and industrial processes by studying them.

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[1] Cubberley, E. P. *Public Education in the United States*, 1934 edition, pp. 506–07.

> The work of the school is in large part to reduce the complexity of modern life to such terms as children can understand, and to introduce the child to modern life through simplified experiences. Its primary business may be said to be to train children in co-operative and mutually helpful living. The virtues of a school, as Dewey points out, are learning by doing; the use of muscles, sight, and feeling, as well as hearing; and the employment of energy, originality, and initiative. The virtues of the school in the past were the colorless, negative virtues of obedience, docility, and submission. Mere obedience and careful performance of imposed tasks he holds to be not only poor preparation for social and industrial efficiency, but a poor preparation for democratic society and government as well. Responsibility for good government, with us, rests with all, and the school should prepare for the political life of tomorrow by training its pupils to meet responsibilities, developing initiative, awakening social insight, and causing each to shoulder a fair share of the work of government in the school.

It is to Dewey's pragmatic philosophy of education that educators in the main turn today for guidance in planning the schools of tomorrow. From his philosophy of education have evolved such terms as "new education," "progressive education," "project method," "activity program," "integrated unit," and the like. Many of the modern idealists recognize the work pragmatism has done for education.[1]

Philosophies of education conditioned by the world today. There has suddenly dawned upon unprepared society a new social era toward which modern life has been surely although unsuspectingly headed for some time. Let us assume that it is, as it should be, *per se* the best era that mankind has yet experienced, and that the difficulties and failures in the midst of a superabundance of life's necessities and luxuries are due to man's unawareness and his unpreparedness for making the essential social adjustments demanded. Many of the accustomed avenues for earning a living have been changed or restricted, and ameliorative frontiers have been exhausted. A large portion of the population has been thrown into either complete or partial unemployment and idleness. Cherished and protected individualism has been almost completely replaced by economic interdependence. Habits of living at relatively high economic levels have permeated the masses. Women have achieved a new social and economic equality and liberty. Government is gradually assuming more and more control over private enterprise and individual activities. These are but a few of the characteristics of the new social order entailing educational adjustments.

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[1] "Pragmatism is the child of idealism. Behaviorism is the child of materialism. Pragmatism and behaviorism combined give us an educational philosophy that is practical, functional, near-to-earth, human, social. It is an educational philosophy that is improving schoolroom practice, making learning a more purposeful process, giving children the sense of reality in the school, making schools into workshops, laboratories, and libraries, and inspiring educational experimentation. For all this, as far as it goes, and it goes far, idealism has only approbation, and the approbation is great." (Horne, H. H., *The Philosophy of Education*, 1927 edition, p. 316. By permission of The Macmillan Company, publishers.)

It is by this changed and changing world today that modern philosophies of education are conditioned. The social studies assume an increasingly more important place in the school curriculum. Vocational specialization tends to give way to a broader and more general type of training. Adult education becomes a more vital part of the educational scheme. The education of girls requires training for a new type of home-making and preparation for their possible vocational careers. Education for a profitable and interesting use of leisure becomes one of the school's major problems. Revised ideas relative to the value, spending, and saving of money are thrust to the fore as well as new attitudes regarding the education of the consumer. New concepts of the government and its functions are imperative. Leaders for the "profession" of government must be educated in a way never before attempted in America. These are some of the problems implied in the world today for a practical philosophy of education.

The authors believe that education should devote itself to life's realities and prepare for actual living. As to the best way of accomplishing this goal, they are eclectic. That is, they believe the most complete and comprehensive concept of education comes through the selection, evaluation, and use of the best ideas of the various philosophies discussed. They accept behaviorism as a methodology but not as an explanation of life in all its aspects.[1] In the controversy between the "Essentialists" and the "Progressives," they believe that both schools of thought on education have contributions to make and are willing to accept the best ideas of each. Outstanding educational authorities are to be found in each of these groups. In any practical philosophy of education the attitude of the public must be included, and the public wants definiteness above everything else. In practice, this has been a criticism of "Progressive Education," and sometimes with good reason. The last word in education has not yet and never will be uttered by any group.

TOPICS FOR DISCUSSION

1. Account for the fact that among the earlier civilized nations the predominant philosophies of education stressed, as the major aim, preparation for militant citizenship. What parallel do you note in certain European countries today?
2. What differences can you note between the objectives apparently underlying Rousseau's philosophy of education and that of Dewey?
3. List the phases of present-day practice which seem to be derived from the teachings of Comenius.
4. Contrast the points of view characteristic of the "psychological movement" with those held by educators prior to that time.
5. What is the relationship between the scientific movement in education and the psychological? Indicate points of possible conflict in the present-day interpretations and applications of the two.
6. It is frequently asserted that we are now entering upon an epoch in civilization with conditions unlike any that have preceded. In the light of such validity as that statement may have, what values are there for a teacher in a survey of past philosophies of education?
7. Under what conditions could there be developed a sound, stable, and permanently valid philosophy of education?

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[1] For a good discussion of this idea see Chapman and Counts, *Principles of Education*, 1924, pp. 94–98.

SUGGESTED EXERCISES FOR STUDY AND DISCUSSION

1. Indicate the word which best describes the following historical aims in education:

—— *Character* (1) backbone (2) bias (3) disposition (4) morality (5) temperament
—— *Culture* (1) civilization (2) courtesy (3) learning (4) refinement (5) schooling
—— *Development* (1) evolution (2) growth (3) increase (4) produce (5) unfoldment
—— *Discipline* (1) correction (2) obedience (3) punishment (4) restraint (5) training
—— *Happiness* (1) cheerfulness (2) comfort (3) delight (4) felicity (5) pleasure
—— *Knowledge* (1) enlightenment (2) erudition (3) information (4) science (5) wisdom
—— *Religion* (1) conscientiousness (2) piety (3) righteousness (4) scriptural (5) theology
—— *Socialization* (1) citizenship (2) government (3) participation (4) philanthropy (5) sociable
—— *Truth* (1) accuracy (2) honesty (3) integrity (4) veracity (5) verity

2. Indicate the theory in each group having the most similar implications with one italicized:

—— *Eclecticism* (1) behaviorism (2) determinism (3) dogmatism (4) empiricism (5) sensationalism (6) skepticism
—— *Experimentalism* (1) behaviorism (2) encyclopedism (3) hedonism (4) humanism (5) instrumentalism (6) intuitionism
—— *Idealism* (1) experimentalism (2) evolutionism (3) materialism (4) naturalism (5) rationalism (6) sensationalism
—— *Naturalism* (1) dogmatism (2) eclecticism (3) humanism (4) intuitionism (5) realism (6) utilitarianism
—— *Pragmatism* (1) empiricism (2) idealism (3) instrumentalism (4) perfectionism (5) rationalism (6) sensationalism
—— *Realism* (1) determinism (2) idealism (3) materialism (4) perfectionism (5) skepticism (6) stoicism
—— *Utilitarianism* (1) experimentalism (2) evolutionism (3) hedonism (4) naturalism (5) pragmatism (6) stoicism

3. Select the best response:

—— The aim in modern education should be (1) knowledge (2) mental discipline (3) individual development (4) adjustment (5) cultural heritage

—— The greatest contribution to practical educational objectives has been made by (1) Herbart (2) Froebel (3) Pestalozzi (4) Spencer (5) Comenius

—— Education as preparation for life was stressed by (1) Rousseau (2) Kant (3) Dewey (4) Kilpatrick (5) Bagley

—— Jefferson's educational philosophy was influenced mainly by (1) Milton (2) Luther (3) William James (4) Rousseau (5) Hegel

4. T. F. It is impossible to prepare a modern philosophy of education consistent with the Declaration of Independence and the United States Constitution.

T. F. The religious purpose in education is now an anachronism.

T. F. There is a difference between a theoretical and a practical philosophy of education.

T. F. There is a difference between immediate and ultimate goals in education.

T. F. A philosophy of education should be concerned with current political issues.

T. F. A philosophy of education can be of but little value to the average teacher or layman.

T. F. A philosophy of education, no matter how sound, must change with such events as the World War and the economic depression.

T. F. The formal discipline theory has educational significance today.

T. F. The waning of authoritarianism is to be regretted.

T. F. Rapid change endangers social stability.

T. F. The outlook for youth is hopeless.

T. F. More use should be made of indoctrination.

T. F. The effect of modern changes on education is uncertain.

T. F. The educative process was autocratically conceived.

T. F. Thomson makes happiness the ultimate aim of education.

T. F. Horne makes training and education synonymous.

T. F. A philosophy of education should contribute new facts.

SELECTED REFERENCES FOR ADDITIONAL STUDY

Demiashkevich, M. *An Introduction to the Philosophy of Education*, chaps. II and III.

Discusses various educational philosophies.

Doughton, I. *Modern Public Education — Its Philosophy and Background*, chap. I.

Gives the story of the development of philosophy. Has a splendid list of suggested readings on the whole field of philosophy.

Horne, H. H. *The Philosophy of Education.* 1927 edition.

This is an old book (1903) which still provides valuable reading. The last chapter of the 1927 edition gives an interesting comparison and appraisal of the older views, and points out the apparently permanent concepts and the changed ideas in educational theory. It contrasts the older Idealism with the newer Pragmatism. Gives extensive bibliographies.

Horne, H. H. *The Democratic Philosophy of Education.*

This book is composed of expositions and comments on Dewey's *Democracy and Education.* It gives a good appraisal of Dewey, and clarifies many of his stimulating but bewildering statements.

Kilpatrick, W. H. *Education for a Changing Civilization.*

This little book is composed of three lectures on the nature of our changing civilization, the demands on education, and the changed education.

Kilpatrick, W. H., and others. *The Educational Frontier.*

This provocative book, in which seven prominent educationists have collaborated, puts forth the principle of experimentation as the remedy for the evils in traditional American education, and maintains that education should be an aggressive leader in forming social and economic life. In the last chapter, the authors summarize their underlying philosophy of education.

Kilpatrick, W. H. *Source Book in the Philosophy of Education.*

This book is composed of stimulating quotations bearing upon the philosophy of education. Consult index of subjects, and note references under "Objectives, educational," "Aims," and "Ends." Every student of education should be familiar with this source-book.

Kuehner, Q. A. *A Philosophy of Education,* chaps. II–V.

Gives selected quotations regarding naturalism, pragmatism, and idealism in education and selections relative to life values.

Rusk, R. R. *The Philosophical Bases of Education.*

This is an interesting little book in which naturalism, pragmatism and idealism are discussed along strictly philosophical lines, and in which the philosophy of education from the idealistic standpoint is in particular presented.

Thomson, G. H. *A Modern Philosophy of Education.*

This is a well-written book and provides worth-while reading. The first six chapters or so are especially apropos here.

Townsend, H. G. *Philosophical Ideas in the United States,* chaps. VIII, XII.

Gives an excellent presentation of the Hegelian philosophy of William T. Harris, and the pragmatic philosophy of John Dewey. The whole book has much of significance for one interested in philosophies of education.

PART II

THE BASES OF EDUCATION

CHAPTER IV

THE BIOLOGICAL BASIS OF EDUCATION

The biological basis of education. The biological aspect of education is fundamental to any adequate concept of the educative process. Not only may education be viewed wholly as a biological process, but any satisfactory understanding of such other viewpoints of education as the psychological, the sociological, the historical, and the philosophical also requires attention to the bearing of biology upon it. The whole equipment by which the individual learns is provided through heredity in the form of biological structure. All of the organism's learning equipment and educational possibilities are deeply rooted in living protoplasm. Native drives and urges and the ways for satisfying them are bound up in biological inheritance. The most that can be done for the individual is to build upon this inherited foundation. Education in all of its aspects is conditioned by the biological heritage.

The modification of the innate, and later the acquired, modes of response to environmental stimuli, is education. The environment provides only the medium or the opportunity for the inherited structure to grow, develop, and function. The teacher and the school can but manipulate the environment so that the responses or outcomes will tend to be most advantageous to the individual and to the social group. It is, therefore, the purpose of this and the following chapter to point out some of the most significant phases of the biological basis of education.

Man an animal. From the outset it is important to recognize that man is an animal. His animal nature has much in common with other forms of animal life. He is conceived and born into the world as are other animals. As they, he is suckled in infancy, grows, matures, mates, perpetuates his kind, grows old, is subject to accidents and diseases, and dies. Similarly he sees, hears, smells, tastes, and feels with corresponding sense organs. In common with other animals he requires air, food, water, and sleep, for the same purposes and in a like manner. He is subject to the same natural laws. He is controlled in his behavior and learns much in the same way as they.

So great are the similarities between man and the other animals of the mammalian family that experimentation can be carried on with lower animals in order to find out more about the nature of man and what may be useful in his service. Points of resemblance in bodily structure, vital processes, and functions are numerous and close, especially when compared with other primates. He is cast in much the same mold as they. Authorities[1] who have made a special study of these similarities find that man's body shares about 70 per cent of its structural details with other animals, and of these about 26 per cent are shared alone with either the chimpanzee or gorilla. The remaining 30 per cent of anatomical features which are considered peculiar to man himself is made up of such characteristics as nude skin, projecting nose, size of brain, shape of foot, and the like. When the parallelisms between man and other animals are viewed from almost any angle the striking resemblances provide convincing evidence that man also is an animal. The newborn babe comes into the world as an animal; but, of course, with human potentialities.

Some striking similarities. Striking similarities are revealed between man and other animals when comparisons are made in respect to anatomical structure, physiological processes, and embryological development. *Structurally*, there is a very noticeable resemblance between man and other animals. Not only are the fundamental parts of the human body present in other animals, but there is a resemblance in their arrangement and form also, and when compared with the anthropoid ape the duplications are many and close. A comparison of the skeleton of man with that of the gorilla throw these likenesses into bold relief. The parallelism is so exact, the bones of the two conforming so closely to a common standard, that certain bones could almost be interchanged. There is also a close correspondence with respect to blood vessels, glands, muscles, nerves, sense organs, teeth, and vital organs.

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[1] The *Encyclopaedia Britannica*, vol. 14, 14th edition, p. 761.

Physiologically, the parallelism between man and other animals is also striking. A comparative study of the functions of the organs and the reactions of parts of the body, as distinct from anatomical structure, reveals remarkable similarities between the human being and other animal forms. The respective vital organs have like functions, and perform their duties in much the same way. A corresponding co-operation among the different sense organs, the nervous system, and the muscles exists for receiving sense impressions and responding thereto; and similar innate reactions tend to be made to given stimuli. There is a likeness in the processes by which man and other animals take in and utilize food materials; take in oxygen and give off the products formed by oxidation in the tissues; eliminate from the body useless, superfluous, and harmful material in the form of sweat, urine, and feces; produce offspring; and so on. Processes, such as the movement of blood in the vessels of the body and the action of the hormones secreted by the glands, are the same for both. There is a sameness in the nature of fatigue, and in the result of sleep and relaxation. Wounds heal in the same manner. There are similar reactions to drugs and medicines. Apes are subject to contagious diseases such as cholera and tuberculosis, and are afflicted with other ailments such as catarrh, apoplexy, and cataract of the eye.

In *embryological* development there is a marked resemblance between human beings and other animals. The embryos of all vertebrates reveal a close parallelism. The formation of the embryo and the course of its development are the same for all animals, including man. Like other animals man's minute beginning consists of a single cell, the common vital unit, formed by the union or conjugation of a male germ cell and a female egg cell. The cell is the structural unit of which animals (and plants) are built. It consists of a minute mass of viscous, translucent material called protoplasm, generally containing a nucleus and an enclosed covering or cell wall. Protoplasm is the original formative material of all animal embryos. Embryonic development takes place by cell division and differentiation. Embryo man follows a strictly parallel road with other animals for a time, and the closer the relationship or kinship with any other animal, the later the embryonic divergence from it.

Biological aim in education. It is a fundamental natural law that plant and animal life, in order to survive and prosper, must accommodate themselves to the conditions, influences, and forces of their surroundings. This truth was long ago summed up in the principle of natural selection and spoken of as the survival of the fittest. The fittest comprise those organisms that are best equipped by nature to meet the conditions of the environment in which they at the time live. The fittest survived, thrived, and reproduced their kind. Those that failed to make the major adjustments died and became extinct. So polar bears tended to become white, giraffes to have long necks, and monkeys to acquire agility in tree-climbing. Survival values led to fleetness of foot, strength of jaws, power of muscles, sharpness of horns, length of tusks, and so on. Examples of this biological adjustment principle in nature are limitless. An interesting observation in survival adaptation is made by Rogers[1] when he says, in regard to the thyroid gland, that "It seems the business of this gland to maintain in the blood a certain definite though small concentration of an iodine compound. In doing so it may, as has been suggested, maintain in the blood for use of the body the iodine content of the sea, and may thus have made possible the evolution of the land animal." Nature has subtly provided countless innate adaptations of one kind or another throughout the plant and animal realm.

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[1] Rogers, C. G. *Textbook of Comparative Physiology*, p. 366.

Proper adjustments between the organism and the environment are not only directly inherited from progenitors, but they may also be acquired through experience. It appears that nature provides innately and definitely the necessary adjustments, whenever the exact reactions which the organism will have to make can be anticipated. This happens to the extent that the features of the organism's environment are constant and fixed. Since, for example, the environment of the fish is simple and fixed, each fish simply relives or repeats the life of its progenitors; and therefore nature can innately and fully equip the fish for all of its life demands. In instances where the environment is complex and changing, where the kind of life the individual will live cannot be foreseen, and where each individual lives his own particular life instead of repeating that of his parents, then it is that nature does not provide ready-made the necessary adjustments, but instead provides a capacity or ability for acquiring adequate adaptations through experience. This gives rise to an adaptable rather than to an adapted animal. While many animals have to some degree been endowed with adaptability, the adaptable animal, *par excellence*, is man.

Acquired adaptations are built up from the modification of already existing responses to the environment, and are commonly called habits. First of all, habits are modifications of purely instinctive behavior, and later of resultant instinct-habit consolidations. All animal learning, including the domestication of animals, is brought about by modifying innate reactions. In this respect the learning process is fundamentally the same for man and other animals. Man has in a high degree the capacity to go beyond the process of modifying the reactions of his organism to fit the environment, and can consciously change the environment for the purpose of promoting his own best interests. Man thus modifies his environment by building shelters, making fires, devising clothing, exterminating disease sources, constructing machines, and so on *ad infinitum.* Broadly speaking, the term "education" includes all the acquired adaptations. Biologically, education is the sum total of the learned adjustments to the environment, starting at birth with the simplest physical adjustments and continuing throughout life with the most intricate mental adaptations. Man's biological aim in education is superior adjustment and wide adaptability, to the end of fitting him more perfectly for a successful existence under the conditions of an increasingly complex and a rapidly changing civilization.

Why the human being can make superior adjustments. That man's gross physical structure is in general not markedly different from other animals, but is in fact very similar to theirs, has been pointed out. Not only does man possess important physical characteristics in common with other animals, but he is even surpassed by them in the efficiency of many shared traits. Take, for example, the sense organs which are so necessary in making contacts with the outside world and so essential in the learning process. In the efficiency of these organs, many animals not only equal but even excel man. The eagle has sharper vision, the deer has more acute hearing, the bat has a finer sense of touch, and the dog has a keener sense of smell. Man's superiority does not lie in the possession of more efficient sense organs. A long list of ways in which certain animals outrank man in physical efficiency could no doubt be compiled.

There are, besides shared traits, certain distinctive physical characteristics which are peculiar to each species alone. Among those which are considered particularly human are man's upright position, with its accompanying versatile hands and vocal apparatus; and the highly developed nervous system by which the activities of the hands, vocal apparatus, sense organs, and certain other parts of the body are controlled and directed. These possessions largely, and some believe exclusively, form the basis of the ability of human beings to make superior adjustments. Conscious control through a highly developed nervous system seems to be the human characteristic that most clearly differentiates man as the most adaptable animal and gives him superiority over other animal forms. The human characteristics of a biological nature which make for superior adjustment and for education, and which merit special consideration, may be summarized as:

1. The freedom of the hand.
2. The vocal apparatus for articulate speech.
3. The highly developed human brain.
4. The prolongation of infancy.

1. *The freedom of the hand.* It is practically a universal characteristic of vertebrates (the limbless reptile is an exception) to possess appendages with the specialized function of bodily support and locomotion. Fish and other aquatic animals have their paddle-like fins by which they propel, balance, and guide the body. Most vertebrates have four supporting and propelling appendages — two fore limbs and two hind limbs. The hind limbs of birds have terminated in feet with which they support the body, grasp branches, move about, and scratch the earth; and the fore limbs have developed into wings for the purpose of aerial flight. All four limbs in such quadrupeds as the horse have terminated in hoofs which are almost exclusively used for support and travel. All four limbs of such other quadrupeds as the dog have terminated in paws

and claws which, in addition to support and locomotion, are used for scratching and digging in the ground. With the monkeys and apes it may be said that all four limbs have terminated in hands by which they are able not only to support themselves and travel about, but with which they can grasp branches and handle objects. In general, there has been a tendency among all animals for all four limbs to be restricted to the function of support and locomotion, but to the extent that other functions do exist they have tended to go to the fore limbs. The upright position of man has entirely freed his two fore or upper limbs, or arms and hands, from locomotion and support, and has specialized these functions exclusively in the hind or lower limbs, or legs and feet. No other animal has arms and hands so completely free and unrestricted for general use as does man.

The freedom of the human hand, under the supervision of the eyes and the direction of the brain, has been a decided advantage to man in the manipulation of his environment and in making superior adjustments. The hand with its complex structure and its flexible fingers and opposable thumb, each capable of making independent and distinct movements, has wide and varied uses. It is able to touch, feel, take up, hold, and move objects with precision and facility. The hand is always ready to respond to almost any conditions or requirements that may arise. It is able to substitute for the eyes of the blind, and for the vocal apparatus of the deaf-mute. It has no difficulty in turning from one thing to another, as the occasion demands. It does this with utmost lightness, quickness, ease, and freedom of movement. This is revealed in the intricate fingering of the piano keyboard by the musician, and in the delicate operations by the surgeon. Without the hand to carry out its plans, the human brain could never have developed art, music, literature, agriculture, commerce, tools, machines, and the numerous other things which are used and enjoyed today; there could have been no civilization; and authorities[1] find evidence that it had much to do with the development of the human brain itself. As indicated in the next topic, it also played an important part in the development of human speech. The freedom of the hand has been an important factor in human progress.

2. *The vocal apparatus for articulate speech.* The vocal apparatus for articulate speech includes the lungs, larynx, soft palate, tongue, teeth, and lips. When these speech organs are formed and co-ordinated in a certain way, they become capable of producing an immense variety of easily distinguished sounds. In mammals the vocal organ is the larynx which contains the vocal cords, and in birds it is the syrinx. Sound waves are produced by puffs of air coming from the lungs, escaping rhythmically from the vibrating vocal cords of the larynx into the pharynx, and going out through the mouth and nose. The mouth of all vertebrates, except man, is almost exclusively used for obtaining food and for fighting, and it is structurally adapted to these functions. Such animals, for example, have an anterior prolongation of the head with long, projecting snout or nib (beak or bill); and they have long, protruding, and greatly enlarged teeth or tusks. These structures provide greater facility in rooting up the earth and securing food and in using the teeth as weapons. This specialization greatly limits the range of vocal sounds that the animal is able to utter. The cries of different animals are confined quite closely to such describable sounds as barking, bellowing, bleating, braying, and so on; and are limited largely to such purposes as sex calls, danger signals, call to offspring or parent, and the like. Next to man, the voice reaches its highest development in the harmonious and pleasing sounds of the singing birds, and in the chatter of the parrot and raven.

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[1] See an article by Dr. Frederick Tilney entitled "How the Hand, Foot, and Brain Led the Way to Humanity," in the *World's Work*, vol. LVIII, no. 12, pp. 45–51. (December, 1929.)

The voice of man alone, with the assistance of the hand and under the control and direction of the human brain, has the innate capability of being developed into articulate speech or language. Unlike other animals the mouth of man is relieved of the task of food-getting and fighting. Man's upright position has made it possible for the hands to take over these functions, and thus leave the mouth free to specialize in voice activities. The teeth, the tongue, the lips, the whole mouth structure of man is especially well adapted for effectiveness as part of the speech apparatus. By a co-ordination of speech organs, man is able to produce a vast range of sounds and learns to combine these into such complicated processes as speaking, singing, and whistling.

With the assistance of the hand in the way of gestures, demonstrations, and pantomime, certain sounds of primitive man were made to represent definite objects, actions, and ideas. These sound symbols or words became effective substitute stimuli in lieu of actual overt situations. A vocabulary of symbolic sounds or words was accumulated by which man was able to express his feelings and experiences to others, and to do sub-vocal talking with himself or, in other words, to reflect. The language mechanism assumed an essential role in thinking as well as in communication. The hand again came in as an instrument for recording these words and thoughts in written form. Vocabulary expansion seems unlimited. The English language now has more than a half million words, not to mention the numerous other languages. This indicates something of the immense range and flexibility of the human vocal apparatus. The use of the speech organs for communication and for thinking is among human beings the biological climax for making superior adjustments to the environment. The lack of language among the lower animals is an important delimiting factor in their lives.

3. *The highly developed human brain.* The appearance of a

brain begins far down the animal scale, and increases in its development and significance up through the animal kingdom. A simple sort of brain bud is possessed by such a lowly animal as the earthworm. All vertebrates, including man, have much the same kind of cerebro-spinal system. The same fundamental parts are present, and are arranged in similar relative positions. There are the *peripheral nerves* of the external body; the longitudinal *spinal cord* of nervous tissue, extending along the dorsal side of the spinal column; the *medulla oblongata* continuing the spinal cord, and forming the lower part of the brain; the *cerebellum* just above the medulla, and forming the large lobe of the dorsal part of the brain; a pair of *optic lobes* or centers; the *olfactory tract*; and the terminating *cerebrum* or hemispheres. The chief difference in the cerebrospinal system of the various vertebrates is in the disproportionate development of the parts above the medulla. The shark and other fishes have a relatively large development of the olfactory lobes, indicating dependence upon smell as the dominate sense. Frogs have an excessive growth of both the olfactory and optic tracts. Birds have an enlargement of the optic lobes and of the cerebellum. In man, the olfactory and optic tracts are entirely obscured by the huge cerebrum which overlies them. The development of the cerebellum and cerebrum increases from the lower to the higher vertebrates, through the successive stages of the shark, the other fishes, the frogs, the reptiles, the birds, and the mammals, and reaches its climax in *homo sapiens*, or man.

The comparison of man's brain with the brains of other animals has resulted in some interesting observations. Man's brain is not the largest among the vertebrates. The elephant's brain weighs about twelve pounds, the whale's about ten pounds; and man's brain weighs about three pounds. Man's absolute brain weight seems to be exceeded only by these two huge animals. The gorilla's brain, which weighs about one pound, is next to man's in size. In comparative relation of brain weight to body weight, man's relative brain size far exceeds that of the elephant and whale. The brain of the elephant averages about 0.2 per cent of its body weight, whereas that of man averages better than 2.0 per cent. On this basis, however, man's brain is again exceeded by other animals. Certain mice and humming birds have brains which weigh as much as 5.0 per cent of their body weight. Man, though, excels all other animals in the relative size of the brain as compared with the spinal cord. The nearest approach to man in this respect is the gorilla. The brain of the gorilla is twenty times the weight of the spinal cord; man's brain weighs forty-nine times as much as the spinal cord. Of man's cerebro-spinal system, the spinal cord makes up 2 per cent, the cerebellum 11 per cent, and the cerebrum or hemispheres 87 per cent. It is the large cerebrum, and particularly the highly developed frontal lobe,[1] that makes man's brain distinctive and sets him apart from all other creatures.

Cerebro-spinal system complicated. The cerebro-spinal system is the most complex and complicated part of the vertebrate body. It is composed of several billion nerve cells or neurons, which are so small that they cannot be seen with the naked eye. Under the microscope they appear as long, slender, threadlike structures. The cell body is composed of living protoplasm, a characteristic property of which is irritability or responsiveness to stimuli. Some of the neurons originate in the ears, eyes, nose, mouth, and skin, and contain nerve ends which are sensitive to some one kind of stimuli as sound, light, odor, taste, touch, heat, cold, and pain. The nerve cells that are at the surface of the body are called *sensory* neurons. There projects from the cell body of each of these neurons, a minute protoplasmic nerve fiber (called *axon*) which conducts the nerve impulse away from the cell body to the endings of the axon. Axons vary in length according to the distance a given neuron needs to conduct the impulse; they may be very short or they may attain a length of two or three feet. In a simple nerve circuit, the terminal branches of the axon of a sensory neuron makes direct contact with the dendrites of a *motor* neuron. The *dendrites* conduct the impulse to the cell body, and from there the impulse continues over the axon of the motor neuron to the muscle cells causing the muscle to contract. The neuron has but one axon leading from it, but may have many dendrites leading to it. The place where the axon of one neuron comes in close contact with the dendrites of another neuron is called the *synapse*. In the more complex nerve circuits, there is the third type of *interconnecting* neurons which go between and make connections among the sensory and motor types. These neurons are the *adjustors* which determine the path the nerve impulse will take and the nature of the response that will be made to a given stimulus. This neural activity, involving millions of microscopic neurons, is too intricate to be understood. It is not known of what the nerve impulse actually consists nor how it travels over the nerve fiber. It is known that it does exist and that it involves the important process by which animals are integrated and adjusted to the conditions under which they live.

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[1] See an article by Dr. Frederick Tilney, entitled: "The Human Brain, Master of Our Destiny," in the *World's Work*, vol. LIX, no. 1, pp. 48–51. (January, 1930.)

The number, arrangement, and quality of the *interconnecting* neurons are important factors in the animal's adjustment mechanism. About two-thirds of the mass of the spinal cord and all of the cerebellum and cerebrum are made up of this connective type of nerve cell. The bonds among the neurons in the spinal cord are inborn, allowing the impulse to follow innately definite and direct pathways. They have to do with the relatively simple and automatic reactions or *reflexes*. These neurons group themselves together in certain association centers and co-operate in carrying on the different reflexes. Definite areas are associated with sensation and movement in particular parts of the body. These nerve centers tend to be arranged along the spinal cord according to the nearest and most direct route to the sensory and motor areas concerned in the reflex action. The neurons of the medulla are in control of the cardiac, vasomotor, respiratory, and other vital activities. Those of the cerebellum are concerned with muscle coordination and balance. The chief areas of motor and sensory control and of the higher mental faculties of the cerebrum have been located and charted. The functioning of all the nerve centers, except in the cerebrum, takes place without any necessary intervention of consciousness. These activities include the automatic acts, the more simple reflexes, and the succession or series of reflexes resulting in the more complex instincts. Habits are built up by modifying the connections between neurons at the synapses in such a way that a fixed response will result from a given stimulus different from the one previously established.

It is the inter-connecting neurons of the cerebrum, of which it is entirely composed, that gives man his brain superiority over other animals. The outer part of the cerebrum consists of a uniform layer of *gray* matter called the *cerebral cortex.* This gray matter is the gray cell bodies of the neurons. In man, the cerebral cortex is about a fifth of an inch thick. The inner part of the cerebrum consists of *white* matter which is the white nerve fibers interconnecting various cell bodies of the cortex and contacting with the neurons of different parts of the body. The chief difference here between man and other animals is in the number and variety of possible tracks over which the nerve impulse may be switched, and the effects retained from the passing of the impulse over these. Man's large cerebrum is notable for the number and the depth of grooves separating the convolutions and for the great development of the frontal lobe. The brain of the chimpanzee closely resembles the convolutionary pattern of the human brain, but in comparison the depressions are relatively shallow. The increased number and depth of the grooves in the cerebrum greatly extends the area of the cerebral cortex and enlarges its neuron capacity. It is estimated that the cortex of the human brain contains 9,280,000,000 neurons. The multitudinous pathways in the brain that a nerve impulse may take are limitless. The possible inter-connections which may be made among over nine billion neurons are beyond finite comprehension. It is here in the cerebrum that the more complex and rational adjustments are made, that the seat of awareness or consciousness is located, and that the mental functions occur. The cerebrum is the center of mental capacity and of the intelligence that directs and controls other organs of the body to the end that superior adjustments can be made to a complex and ever-changing environment.

TOPICS FOR DISCUSSION

1. In what sense can it be said that education may be viewed wholly as a biological process? What disadvantages are there in such a view?
2. What advantages are there in studying animal behavior as an aid to the understanding of human learning? What dangers?
3. Give examples to corroborate the view that man is the most adaptable of all animals.
4. Upon what does the capacity for training in animals depend? Illustrate this by listing five different species of animals in the order of their susceptibility to training, with reasons for the variation.
5. Can you suggest at least two other human characteristics favorable to superior adjustment in addition to the four discussed in the text? Arrange the entire list in the order of relative importance for human development, giving reasons for your preferred selections.
6. Is it possible to carry on extensive thinking without language? How are language habits related to motor habits?

SUGGESTED EXERCISES FOR STUDY AND DISCUSSION

1. Select the best response:

—— Probably the first animal to be domesticated by man was the (1) camel (2) cat (3) dog (4) elephant (5) horse

—— Nerve fiber conducting impulses away from the cell body is called (1) axon (2) dendrite (3) effector (4) receptor (5) synapse
—— The physical basis of life is (1) calorie (2) carbohydrate (3) protein (4) protoplasm (5) vitamin
—— Consciousness is best described as (1) awareness (2) condition of soul (3) mind (4) sense of guilt (5) spiritual substance
—— The neurons of the cerebellum are in control of (1) heart beat (2) higher mental faculties (3) muscle co-ordination (4) respiration (5) vasomotor system
—— The evolution theory was first formulated by (1) Darwin (2) Lamarck (3) Wallace (4) Weismann (5) Spencer
—— The neurons involved mostly in learning are the (1) effectors (2) interconnecting (3) motor (4) receptors (5) sensory
—— The sense organ affected most by the modern world is that of (1) hearing (2) sight (3) smell (4) taste (5) touch
—— The most commonly seen ape in captivity is the (1) chimpanzee (2) gibbon (3) gorilla (4) orang-utan
—— The most primitive mammal is the (1) bat (2) duckbill (3) kangaroo (4) opossum (5) whale
—— The weakest proof that the brain is the organ of the mind is (1) anatomical (2) brain weight and intelligence correlation (3) common experiences (4) pathological (5) vivisectional
—— The most important contribution to human progress was (1) use of fire (2) invention of tools (3) making of clothing (4) development of agriculture (5) development of language

2. Rank in order of ascent in animal kingdom (Lowest first):

—— amoeba —— birds —— crabs —— fishes —— frogs —— jelly fish —— mice —— snails —— snakes —— spiders —— sponges

Rearrange the following in proper order (indicate by numbering):

—— Caucasian —— Chordata —— Hominidae —— Homo —— Lemuroidea —— Mammalia —— Mongolian —— Negroid —— Primates —— Sapiens —— Simiidae —— Vertebrata

In how many of the above can man be included? ——
How many of the above pertain to man only? ——

3. Indicate whether statement is true or false (verify):

T. F. Irritability is a characteristic property of protoplasm.
T. F. Experiments in animal learning have significance for human learning.
T. F. A changing environment demands an adaptable organism.
T. F. Man is in all respects the superior animal.
T. F. Organs with specialized functions are the most educable.

T. F. Educational and biological adjustments differ in origin.
T. F. Modern biologists hold that man descended from anthropoid apes.
T. F. All primates have opposable thumbs.
T. F. Apes can handle a ball with greater facility than man can.
T. F. The cerebrum is made up largely of sensory neurons.
T. F. Man's brain exceeds all other animals in relation to body weight.
T. F. Posture and mental state seem to be related.
T. F. Education can modify the brain structure.
T. F. Automatism is the end of all education.
T. F. The most potent stimulus is hunger.
T. F. Human societies are older than insect communities.
T. F. New life forms develop from highly developed organisms.
T. F. A fish probably has a consciousness of itself.
T. F. Mechanists and vitalists disagree.
T. F. Progress is entirely illusory.

SELECTED REFERENCES FOR ADDITIONAL STUDY

Atwood, W. H., and Heiss, E. D. *Educational Biology.*

This discusses the biological background considered fundamental to human behavior. Reference lists are given.

Caldwell, O. W., Skinner, C. E., and Tietz, J. W. *Biological Foundations of Education.*

Presents biological knowledge which the authors believe will contribute to a more purposeful development of the general philosophy of education. Has good references, a glossary, and true-false and completion exercises.

Eikenberry, W. L., and Waldron, R. A. *Educational Biology.*

The authors maintain that teaching problems are fundamentally biological problems. Biological information that has special bearing upon education is presented. Parts IV and V are good reading here.

Kilpatrick, W. H. *Source Book in the Philosophy of Education.*

Selected quotations bearing on the biological nature of the human individual are given on pages 96–111. These should be studied carefully.

Morrison, H. C. *Basic Principles in Education.*

Appropriate reference material will be found in this book on pages 60–157. Reading lists are given.

Warden, C. J. *The Evolution of Human Behavior.*

This is a clear and sane presentation of the story of evolution, from the earliest forms of life until man was born. It contains a well-selected and comprehensive bibliography.

CHAPTER V

THE BIOLOGICAL BASIS OF EDUCATION
(continued)

4. *Prolongation of infancy.* Another biological characteristic having marked educational significance is the length of the period of infancy. Every animal, except simple-budding and fission forms, comes into life from a fertilized egg. Among animals below the mammals, the fertilized egg develops as a rule outside the mother's body. With some species of animal life the egg immediately after being deposited is abandoned by the parent, and with others it is cared for and protected by burying in the sand, by attaching to the parent's body, or by brooding. In most such cases the newly hatched animal is completely equipped for an independent life and requires no parental care. When, as in the case of naked and helpless birds, the parents do supply some protection, nourishment, and warmth after hatching, this is necessary for a relatively brief period and the young soon become competent to care for themselves.

Among mammals the fertilized egg develops within the body of the female, and for some time after birth the helpless offspring is nourished by milk secreted from the mammary glands of the mother. The length of the gestation period among mammals varies all the way from one month, as with the dormouse, up to at least eighteen months as in the case of the elephant. Several animals, like the elephant, whale, and horse, have a longer prenatal period than the normal nine months for mankind. No animal, however, is so immature and helpless at birth or so unable to help itself for such a long period afterward as is the human child. While mammals vary considerably in the amount of parental care and protection required after birth, they are in most cases adequately perfected for assuming the full activities of adult life *within* the first year, and very few require a second year for maturing. The prolonged human infancy is a unique characteristic of man, without like or equal in the animal kingdom.

Significance of prolonged infancy. There is an obvious continuity between the prenatal and the postnatal development. Birth does not mark the beginning of life, but rather the coming into a different state of existence. The development of an individual may be likened to an unbroken line upon which the natal event occurs as an incident in the process of growth:

Birth
Prenatal ↓ Postnatal
Continuous development

Nature completes its work before birth for those lower animals whose lives follow a regular and simple course. It is because such animals live in a fixed environment and simply repeat the lives of their predecessors that the creative forces are able by heredity to fit them fully during the prenatal period for meeting the major requirements of their surroundings. The little fish is an adult in miniature, fully and completely equipped on its natal day to cope independently with the normal conditions of its environment. In the case of those animals whose life activities are more complex and for whom the exact environmental adjustments cannot be predicted, nature does not complete so much of its work before birth, but provides a period of infancy, during which growth continues under the formative influences of the existing surroundings. Consequently as species ascend in the animal kingdom the length of the period of infancy tends to become longer. Its duration is indicative both of the animal's capacity for making varied adaptations and of the complicated destiny for which the animal is designed. Man's incompleteness and helplessness at birth, his prolonged formative period, and his incomparable final achievement, are all mutually related.

The educational significance of the prolonged period of infancy lies in the extended time and the increased plasticity which it provides for the youth to acquire the necessary adjustments to the adult environment. The human infant's protracted inability to provide for itself, and its continued reliance upon others for care and nourishment, leave for it a long period which can be devoted exclusively to learning. Through the ages more and more time has become necessary in order to learn the increasing amount required. Fortunately, the child is particularly well fitted by nature to profit by this prolonged infancy. At no other time in life is the individual able to learn so much in the same length of time. It is a period of plasticity and growth. Youth is exceedingly impressionable, docile, and easily guided. Not only is the gross bodily structure extremely flexible, but the nervous system also is readily adjustable to meet the requirements of new situations. Many of the more than nine billion cell bodies of the cerebral cortex, while present at birth, have not yet acquired their distinct and separate functions. Many of them are poorly supplied with the necessary axons and dendrites for discharging their functions. While the process of sending out these fibers for making useful contacts probably continues far into adulthood, their growth seems to be particularly active in early life. Many of these may develop only with age and environmental stimuli. Youth not only provides a physiologically teachable time for the benefit of the individual of a single generation, but it also throughout the ages supplies the race with a continuous plastic element, rejuvenates it, and keeps it adjustable to the changing environment. Conditions favorable to educational growth are identified with the prolongation of the period of infancy. Any neglect of this biological opportunity for educational development is a waste of childhood and an injustice for which no recompense can later be made.

Adolescence. While the term adolescence[1] is sometimes used with reference to lower animals, it is usually restricted to human beings and indicates that part of the period of infancy between puberty and maturity. Puberty is really a physiological maturity in that it is the earliest age at which individuals are capable of begetting children, and is in general considered to occur in the female at about the age of twelve and in the male at about the age of fourteen. Maturity refers to the full biological growth and development of the individual, and is as a rule completed in the female by the age of twenty-one and in the male by twenty-five. There is a wide individual variation from the above ages for both sexes in the process of growing up from childhood to adulthood, due to climate, environment, food, health, race, and perhaps other more obscure factors.

Many of the earlier beliefs regarding adolescence have been found to be erroneous and fantastic,[2] and have been replaced by an accumulation of more accurate information based upon scientific studies. No longer do educators and psychologists consider the onset of adolescence as a sudden leap into a mysterious condition of life, but rather as an indefinite transition period when the individual gradually takes on the biological characteristics of an adult. Then the plastic skeletal system and bodily form assume adult proportions, lung capacity and blood pressure increase, the blood and bones change chemical composition, glandular alterations occur, sex instincts mature, and the emotions become strong. All the biological maturings of adolescence, together with the social life stimulations and the civilized life repressions and deferred sex experience, create for the modern adolescent physical, mental, and moral adjustment-problems of special difficulty and demanding sympathetic understanding. Pubescent traits, such as depressions, emotional instability, feeling of insecurity, restlessness, phantasies, skepticism, and the like, are normally to be anticipated and planned for in the youth's education. The great educational significance of the adolescent period was recognized in primitive times and demands the most careful consideration in these modern times.

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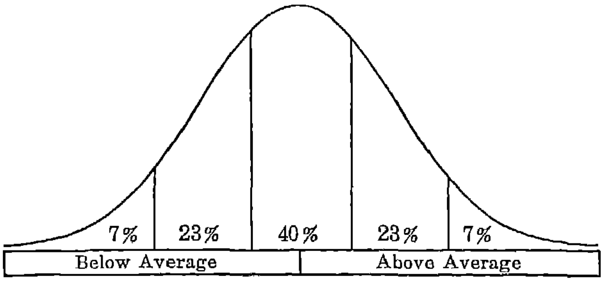
[1] *Adolescence* is a term derived from the Latin word *adolescere*, meaning "to grow up to" maturity. It is interesting to note in this connection that the word *adult* comes from the Latin *adultus*, which is the past participle of *adolescere*.

[2] The best example of the earlier studies and the one of greatest historical interest is the two large volumes on *Adolescence*, written by G. Stanley Hall in 1904.

Variation. Marked similarities and likenesses in biological structure and functions among animals and mankind have been noted. Conspicuous differences also have been indicated. Upon the basis of differentiating characteristics, interbreeding, and reproducing the common distinctive traits in offspring, animals are classified into species. In any given species "like begets like." Offspring resembles its progenitors, but the progeny is never precisely like its parents. While individuals of a species are more alike than different, yet there exists a universal tendency for the characteristics of every organism to diverge from those of the parents producing it. Many individual differences, especially among human beings, are acquired from contact with dissimilar environments; but many others are inborn and are passed on from generation to generation in accordance with laws of heredity. Variations occur among individuals in digestion rate, endurance, heart beat, height, mental capacity, quickness of thought, reaction time, skin texture, strength of emotions, thumb impressions, and for every structure and function. Seeming exact likenesses are more apparent than real, and are due to the lack of sufficiently discriminating measurements for detecting existing differences. Variation among individuals of a species seems to be a universal law of nature, with man probably more highly variable than the lower animals.

The extent of individual differences conforms with the biological law of variation, and is best described by the bell-shaped normal-distribution curve:



For any trait or combination of essential characteristics within a species there is an accumulation of individuals around the mean or middle. These are the typical specimens, and they are just about average. The middle fifty per cent of individuals conform rather closely to the average for the group. From the average the distribution curve slopes off gradually toward the upper and lower extremities, showing a diminishing number of individuals as the distance from the average increases. Equal distances above and below the average indicate an equal number of individuals. The curve shows similarity in form on opposite sides of the middle. In a large number of cases the distribution of differences will approximate the law of deviation from an average. Based upon this biological law of variation it is possible to calculate the proportion of individuals of a species which will probably be at the different locations between the possible extremes for height, mental capacity, and other traits.

Causes of variation from type. The causes of hereditary resemblances and differences are rather obscure, yet something is known about them. The vehicle of heredity is the microscopic cell of which all individuals are constructed. The nucleus of this structural unit contains for each species a definite and generally different number of chromosomes. The human cell has forty-eight chromosomes (twenty-four pairs). Each individual begins with a single cell which by the mitotic cell-division process becomes two, then four, eight, and on by this geometrical proportion to the estimated twenty-six trillion for the human body. As the cells increase in number they become differentiated and form the various tissues, organs, and other parts of the individual's body. In addition to these somatic cells of which the body is composed, there are the reproduction or germ cells. The germ cells are the bearers of heredity, and have implicitly within them all the possible characteristics of the species. They are the immortal part of the species which provide continuity throughout the generations. Fortunately the germ cells are not affected by habits or acquired traits, and so the acquired characteristics of an individual are not inherited by succeeding generations in the form of instincts as was once believed.

The germ cells multiply by mitosis the same as the somatic cells until sexual maturity. The final preparation or maturation of the germ cells for union in fertilization differs however from the usual mitosis. At this time the egg or female germ cell undergoes two successive mitotic divisions. The first is an unequal division of the cell substance, so that one part is slightly diminished in bulk and instead of the usual splitting of the chromosomes, they pair themselves, separate, and half goes to each new cell. The second division also involves an unequal separation of the main cell, but this time the chromosomes are split off as in the usual mitosis. As a result of this process there exists one true egg or female gamete with but twenty-four chromosomes (one half the normal number) and three minute cells or polar bodies which are functionless and disappear. The sperm, or male germ cell, undergoes a similar process except that there is each time an equal division of the cell body with the result that there are four small functioning motile male gametes, each also with twenty-four chromosomes. The reduction of the chromosomes in the maturation of the germ cells provides for the normal number of forty-eight again when the male and female gametes fuse and form the fertilized egg or zygote from which a new individual is developed by the mitotic process.

Each pair of chromosomes are assumed to contain a distinct series of factors, genes, or elements which contribute to the individual's final outcome and determine his innate characteristics. Since the possible chromosome combinations which by the maturation process may be produced by two parents are practically interminable, the chance that two children will be exactly alike is exceedingly slight. Dr. Newman,[1] speaking of variation by combinations in the zygotes, says:

> Each additional difference doubles the number of combinations, so that when we consider man with twenty-four pairs of chromosomes, or some other animals with even twice that number, we can easily understand how millions of different combinations of individual differences may arise, and we cease to wonder that no two human beings are alike (except duplicate twins that come from a single zygote and hence have identical heredity).

The chromosome combination accounts for both the offspring's divergences from and its resemblances to the traits of its parents. The combination of chromosomes in forming the zygote supports in general Galton's rather simple theory of inheritance, the law of filial regression, in which he announced that the parents of an individual contribute on an average one half of the total inheritance, the grandparents together one fourth, the great grandparents together one eighth, and so diffusing in geometrical proportion along the genealogical line.

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[1] F. A. Cleveland, *Modern Scientific Knowledge*, 1921, p. 350. By permission of the Ronald Press Company.

Mendel's laws of inheritance. The mutual paternal and maternal contribution to an individual's inheritance does not result in a general averaging or blending of traits. The height of the offspring is not the average height of the two parents who produced it. Many traits act independently as units in heredity. Some traits are recessive and do not appear at all in the individual, but nevertheless are latently present in the germ plasm and are, under proper conditions, capable of being transmitted to descendents. Others are dominant and appear in the offspring to the apparent exclusion of the antagonistic characters. Mendel in his laws of heredity indicates how these unit characters tend to combine in succeeding generations.

According to Mendel's laws of heredity, if one parent has the unit character of tallness in pure form, and the other parent has the unit character of shortness in pure form, all the cross or hybrid offspring of this interbreeding will be tall because tallness is dominant over shortness. These hybrids however will have latently present in the germ plasm the recessive character of shortness. If two such tall hybrids mate, three out of four of the second generation hybrids will be tall and one will be short. One of the three tall offspring will have the character of tallness in pure form; the other two will have that character as a dominant trait, but will carry the antagonistic character of shortness in the germ plasm, and the short one will have the character of shortness in pure form. These laws describe the tendency for unit characters to segregate into pure and hybrid forms, and for one unit character to dominate over another. The inheritance of mental ability is supposed to follow Mendel's laws, with feeble-mindedness being a recessive trait. Studies of such families as the notable Jonathan Edwards's and the feeble-minded Jukes and Kallikaks seem to verify this supposition. These discoveries, together with the complicated reversions and mutations in inheritance, give some explanation as to why individual differences are so marked and general.

The endocrine or ductless glands. While relatively little is known about the exact functions of the endocrine or ductless glands, their importance in determining and influencing the individual's physique, emotions, personality, physical and mental efficiency, health, and general behavior is receiving constantly increased recognition. The ductless glands secrete directly into the blood or lymph stream for circulation a chemical substance (hormone) which has a stimulating effect upon a specific organ or organs. Treatment with glandular extracts is becoming common practice, and with amazing results. The most that is known so far has to do with the influence of the hormones secreted by the adrenal, pituitary, thyroid, parts of the pancreas, and the interstitial cells of the ovaries and testes. That there is a close relationship between the activity of the adrenal glands and such strong emotions as fear, rage, and pain, is well known. Under the stimulation of these emotions, an excessive secretion from the adrenal glands causes the involuntary smooth muscles to constrict and the blood to clot more readily and provides greater energy and strength through causing the liver to throw more sugar into the blood. Obviously this all has a survival value in natural situations which create these emotions. The adrenal glands have a close connection with muscular fatigue and capacity for work.

The pituitary gland is believed to have considerable influence upon the growth of skeletal structure and muscles. Its excessive activity is thought to produce an abnormal development in size (giantism) accompanied with muscular and constitutional weakness, and its inadequate activity to result in stunted growth and muscular fatigue. Something of the possible significance of this gland is indicated by Dr. Rogers, when he says:[1]

> This gland (the pituitary) is also the gland of intellectuality. It seems to be a tonic for the frontal lobes and in its activities leads to curiosity and to accuracy in judgment. It sensitizes the cells of the brain for mental growth, and is associated with philosophic, scientific, and intellectual development. It appears necessary for the preservation of the memories. A deficient anterior pituitary secretion seems associated with the moron condition.
>
> What is commonly spoken of as constructive imagination is very likely the expression of a certain balance in the activity of the two parts of the pituitary gland.
>
> The secretion acts upon the basal ganglia that are the centers for emotional control, and so has to do with the regulation of the social and creative instincts, tender-heartedness, sympathy, and a religious feeling. When acting in excess, it leads to phobias, fears, anxiety, neuroses, suspicions, hallucinations, delusions, and nervousness.

The thyroid gland is the best understood of the endocrine organs. It secretes an iodine element that is essential to growth and development and which controls the rate of metabolism. An oversupply of this chemical substance induces irritability and mental instability; while an undersupply causes emotional depression, delusions, faulty memory, and intellectual sluggishness; and a defective quality or lack of this hormone causes cretinism and goitre. Rogers[2] says that:

> Without thyroid, no thought, no growth, no distinctive humanity or animality is possible.... Without thyroid there can be no complexity of thought, no learning, no education, no habit formation, no responsive energy for situations, as well as no physical unfolding of faculty and function, and no reproduction of kind, with no sign of adolescence at the expected age and no exhibition of sex tendencies thereafter.

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[1] Rogers, C. G. *Textbook of Comparative Physiology,* 1927, p. 370. By permission of McGraw-Hill Book Company, Inc.

[2] *Ibid.*, p. 367.

The hormone of the pancreas (insulin) regulates the amount of sugar in the blood. A deficiency of insulin causes diabetes. The hormone of the interstitial cells of the sex organs influences the development of the secondary sex characteristics of the male and female. There are other ductless glands which act as chemical adjusters, but little is yet known about their functions. The parathyroid seems to regulate the irritability of the nerve cells. The activity of the pineal gland is restricted to childhood, and appears to have the function of inhibiting the activity of the sex glands and probably some of the other endocrine glands. The activity of the thymus also normally coincides with the period of childhood, and seems to restrict the activity of other glands and to retard growth. Childhood is lengthened or shortened according to the persistence of the activity of the thymus gland. The action and interaction of the hormones of the different endocrine glands provides a chemical mechanism by which the various parts and functions of the body are adjusted one with another, and from which a completely co-ordinated and normal individual results.

Mental life. Just what is meant by mental life has long been subject to controversy. Aristotle is regarded as having made in his *De Anima* the first studies of mental phenomena, and in his work the psychological is merged with the biological. This original mergence concept continued from the fourth century B.C. for two thousand years until in the seventeenth century, when the French philosopher, René Decartes, postulating a sharp distinction between mind and matter, assumed that each formed a separate class of substance and that no causal interaction existed between them. This "Cartesian Dualism" attracted many followers among scientists, and for nearly three centuries sharply separated the field of psychology from that of biology. Since the beginning of the twentieth century the separate-mental-substance concept has lost ground, and psychologists are again recognizing the mental and the physiological and neurological interrelationships.

By mental life we now usually refer to the behavior, the interaction of the integrated animal organism with its environment, made possible through its biological equipment and particularly by means of the nervous system which for human beings is remarkable for its sensitivity, plasticity, and retentivity. Psychology then is not only part of the broad field of biology, but it goes to biology for its foundation elements and it includes the study of the mental life of other animals than man. Warren[1] properly defines human psychology from this viewpoint as "the science which deals with the interaction between man and his environment by means of the nervous system and its terminal organs, together with the mental events which accompany this interplay." The major approaches to psychology and their education implications are discussed in the next two chapters.

TOPICS FOR DISCUSSION

1. What typical facts relative to adolescent behavior gave rise to the belief that mental development during adolescence proceeded by distinct leaps or spurts?
2. What educational advantages are there in the fact that some of the more strongly social tendencies, such as the sex instincts, do not become active or dominant until adolescence?
3. Discuss the validity and limitations of the democratic doctrine that "all men are created equal."
4. Suggest situations in the classroom in which a knowledge of the influence of endocrine glands might be of great value to the teacher.
5. Under what circumstances can the instinctive behavior of children be most effectively observed? What does this suggest in regard to the training of teachers?
6. What implications are there as to educational consideration of individual differences in the historical process of human development?

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[1] Warren, H. C. *Elements of Human Psychology*, 1922, p. 5.

SUGGESTED EXERCISES FOR STUDY AND DISCUSSION

1. Match:

A.	—— Adrenal	(1) associated mainly with intellectuality
	—— Interstitial	(2) controls rate of metabolism
	—— Pancreas	(3) regulates amount of sugar in blood
	—— Parathyroid	(4) influences secondary sex trait development
	—— Pineal	(5) seems to regulate irritability of nerve cells
	—— Pituitary	(6) closely associated with strong emotions
	—— Thymus	(7) inhibits activity of sex glands
	—— Thyroid	(8) seems to regulate length of childhood

B.	—— Albinism	(1) thyroid insufficiency
	—— Atavism	(2) produced by pancreas
	—— Congenital	(3) control of heredity
	—— Cretinism	(4) an internal secretion
	—— Ecology	(5) inherited in groups
	—— Eugenics	(6) heritable variations
	—— Euthenics	(7) environment and life
	—— Hormone	(8) lack of pigments
	—— Insulin	(9) sex chromosome
	—— Linkage	(10) grandparental traits
	—— Mutation	(11) environment betterment
	—— Pure line	(12) present at birth
	—— X-Chromosome	(13) identical genes
	—— Zygote	(14) gamete union

2. Select the best response:

—— —— The two most outstanding foundations for social science are (1) anatomy (2) anthropology (3) embryology (4) genetics (5) physiology (6) psychology

—— —— Transmitting of acquired modifications was denied by (1) Lamarck (2) Darwin (3) Weismann

3. Indicate whether statement is true or false (verify):

T. F. Comparative embryo development indicates animal relationship.
T. F. Bankers' children should be expected to excel in arithmetic.
T. F. Euthenics is as important to civic life as eugenics is.
T. F. Chromosomes of males and females are exactly the same.
T. F. One's pedigree involves one's genealogy.
T. F. Inbreeding is sometimes beneficial.
T. F. The prenatal period is the most important of the child's life.

T. F. All congenital traits are inherited.
T. F. Activity of kinetic system is largely emotional.
T. F. Growth and development mean the same thing.
T. F. All diseases have a biological basis.
T. F. Fatigue is an abnormal phenomenon.
T. F. Hormones have become articles of commerce.
T. F. Precocious animals are biologically most advanced.
T. F. Heredity and environment are interdependent.
T. F. Genius is recognized earlier than mental deficiency.
T. F. Handedness is the result of social conditioning.
T. F. Genetics is a relatively recent study.
T. F. Monogamous marriage is a biological development.
T. F. An impersonal science of education will be developed.
T. F. Race crossing is definitely undesirable.
T. F. The first duty of parents is to provide suitable environment.
T. F. The primary duty of woman is to rear children.
T. F. Popular education drains upper classes of their best stock.
T. F. Reason is stronger in man than emotion.

SELECTED REFERENCES FOR ADDITIONAL STUDY

Atwood, W. H., and Heis, E. D. *Educational Biology.*

Especially pages 198–289 are applicable here. Reference lists are given.

Caldwell, O. W., Skinner, C. E., and Tietz, J. W. *Biological Foundations of Education.*

Especially pages 85–101 and 214–506, which provide good reference material and reference lists for use here.

Dendy, A. *The Biological Foundations of Society.*

A readable discussion of the development of man and the process by which the race has evolved and built up its present civilized society.

Doughton, I. *Modern Public Education — Its Philosophy and Background,* chap. v.

Shows the function of the teacher and the school in the light of the biological basis of education. Has a good list of suggested readings.

East, E. M. *Heredity and Human Affairs.*

There is a genetic aspect to nearly all the problems of society. The author explains the genetic principles which have a bearing upon the more important social questions.

Eikenberry, W. L., and Waldron, R. A. *Educational Biology.*

A discussion of growth, development, and hormones is given on pages 267–78, and of heredity on pages 393 ff. A good list of references is included.

Gesell, Arnold. *Infancy and Human Growth.*

Deals with early human growth by methods of systematic observation and of direct record. The significance of infancy is given special consideration on pages 334-410.

Jennings, H. S. *The Biological Basis of Human Nature.*

An excellent presentation of those aspects of modern experimental biology that are of most interest in considering the problem of human personality and society.

Kuehner, Q. A. *A Philosophy of Education*, chap. IX.

Gives selected quotations on physical heredity in education.

CHAPTER VI

THE PSYCHOLOGICAL BASIS OF EDUCATION

FIELDS AND POINTS OF VIEW

Education dependent on psychology. It is a matter of general knowledge that the character and amount of education possible for any individual are determined by his mental equipment. A careful analysis of the relationships between psychology and education reveals that the basic connections are manifold, and that educational theory and practice are conditioned very fundamentally by the nature of human behavior. Some of the psychological principles underlying education have been very accurately determined; others, although equally important, are less clearly understood. Before undertaking an enumeration and appraisal of these relationships, it will be helpful to examine briefly the present status of psychology as a science, the scope and direction of its major activities, and the extent to which it is prepared to furnish trustworthy findings upon which to base a sound philosophy of education.

Psychology an evolving science. Less than a half-century has elapsed since psychology began to break away from its traditional place as a subdivision of philosophy, with introspection as almost its sole means of gathering data, and to turn toward the objective methods of the laboratory sciences. The past three decades have seen impressive progress made by this young science, utilizing various techniques and proceeding from equally various points of departure. The present differences among the more or less antagonistic "schools" would indeed give students the impression that they are dealing not with one science but with a half-dozen conflicting sciences. Like explorers starting from different points to chart a new territory, proceeding often in opposite directions, yet adding, each in his own way, new areas to the fields of knowledge, the psychologists can hardly be expected as yet to have harmonized or reconciled their various paths of progress through the frontiers of this largely uncharted territory of human behavior. To avoid confusion in our later attempt to evaluate their contributions, let us note the characteristic point of view of each of the prominent schools or systems of psychology, and the corresponding fields of investigation which each has undertaken.

Divergent systems and points of view. In the development of modern psychology, with its applications of the scientific method to the study of mental life and behavior, the first, and perhaps most fundamental, divergence in points of view arose over the question as to the relative importance of consciousness as an object of study and the manner in which its phenomena should be investigated. Those psychologists who regard consciousness as the primary field for study have in turn given us two systems of thought, corresponding to their methods of approach. The *structuralists* undertake to analyze the facts of consciousness into elemental processes; the atomic constituents, so to speak, which make up the sum total of mental life. The *functionalists* prefer to regard mental phenomena as primarily responses of adjustment or adaptation to environment. Their emphasis, accordingly, is upon conduct, and they are interested not so much in what the phenomena are as in what functions each performs by way of adjustment.

In their insistence upon limiting study to purely objective phenomena, the *behaviorists* profess no interest whatever in consciousness or mind as such, maintaining that psychology can be truly scientific only when dealing with activities susceptible of accurate objective measurement. The *Gestalt psychologists* seek an explanation of conduct in terms of integrated patterns, emphasizing mind-set and general intraorganic conditions as important factors in the totality which determines the reaction to any stimulus. Finally, mention must be made of the *psycho-physical* group, who maintain a functional viewpoint, not limited to conscious processes, but embracing the entire organism and seeking an interpretation of experience through the interaction of mind and body.

In the foregoing attempt to enumerate and characterize briefly the more influential systems of psychologic thought, no sharp distinctions have been undertaken. We are concerned now only with noting the major sources from which may be drawn significant contributions upon which to base a philosophy of education. In pursuance of that purpose, it will be profitable to examine the methods of investigation employed by each of these schools, and the nature of the data thus established as bearing upon an understanding of human nature and conduct.

Structural psychology. Structuralism, or "Existentialism" as its proponents have more recently preferred to term it, derived its original concepts from the work of Wundt. In America its greatest exponent was Titchener, and most of the prominent psychologists of this group were trained in his laboratories. While accepting introspection as the essential method of analyzing elements of consciousness, this group insists that it must be trained introspection, paralleling objective methods as closely as possible.

The structural psychologist works upon the primary assumption that each fact and phenomenon of experience or consciousness has its basis in the nervous system. In his viewpoint, psychology is closely linked with neurology. Some of the most valuable research carried on by this group has dealt with sensation and the sense organs. Studies in this field can utilize objective methods, and the result has been the accumulation of very important scientific data relative to sensory qualities and the conditions under which the receptor organs function with the greatest clarity and effectiveness. The keynote of procedure in these studies is analysis. When this is carried beyond the sensory stage, and problems of the more complex mental processes are encountered, objective methods are no longer adequate and analysis must become introspective. This necessity was set forth in the following words, by Titchener,[1] who, prior to his death, was the most influential psychologist of this group, "Let us be clear first of all — the matter admits of no hesitation or compromise — that the experimental psychology of the normal adult human mind must take the form of introspective analysis." He declared further that the aim of the psychologist is "to analyze the structure of mind; to ravel out the elemental processes from the tangle of consciousness or to isolate the constituents in a given conscious formation. His task is vivisection; but a vivisection which shall yield structural, not functional, results. He tries to discover first of all what is there and in what quantity — not what it is there for."

The weakness of this system of psychology lies in the tendency to run into analytical abstractions. To the student of education, the analysis of elemental processes with entire disregard of their functions or meaning suggest futility, while the minutiae of their sensory studies may seem confusing. Out of the contributions of this school of psychologists, however, may be gleaned much material of basic value to education, especially with regard to optimum conditions of sense impression and attention. To the extent that there is truth in the dictum of Comenius, "Whatever is in the mind must first have been in the senses," we are under obligation to the structuralists for their painstaking analysis of the elements in that phase of learning. Their theory of the mechanistic dependence of mental processes upon the nervous system is held in common with the more recent school of behaviorists, whose methods and contributions will be discussed in a later section.

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[1] Titchener, E. B. "Problems of Experimental Psychology," in *Am. Journal of Psychology*, 1905, p. 16.

Functional psychology. Perhaps the most influential adherents of functional psychology have been the Chicago University group, first represented by Dewey near the beginning of the century, and most recently by Carr. Variants of the functional school are the extreme "hormic" psychology of McDougall, and the more eclectic "dynamic" psychology of Woodworth. The following paragraphs attempt to sketch only the essential phases of this school, in conformity with the generally accepted principles held by the group as a whole.

In contrast with the structural viewpoint which aims, in the study of consciousness, "to discover first of all what is there and in what quantity — not what it is there for," the functional view is that the most important thing to learn about consciousness is its use or function. This conception was expressed at the Wittenberg Symposium in 1928 by Claparède,[1] in these words: "The functional point of view places the emphasis upon conduct. Functional psychology demands less what the phenomena are, than what they *do*." The chief interest of this school is in studying the part which consciousness plays in directing the adjustment of the human organism to its environment.

The functional psychologist thus regards mind as an adaptive device which has evolved with the increasing complexity of the organism as a necessity for its adjustment. He accepts the biological concept of adaptation, with consciousness as the crowning development to that end, supplementing, but superior to, the reflexes and instincts. The latter are predetermined by heredity, and non-conscious behavior is thus relatively fixed. Conscious behavior, on the other hand, is plastic and changing, adjusting itself to the needs presented by conditions as they arise.

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[1] "Feelings and Emotions," by E. Claparède, in the *Wittenberg Symposium*, p. 126. By permission of Clark University Press.

The experimental studies carried on by this school upon problems relative to the behavior of individuals confronted with unaccustomed difficulties and their consequent conscious efforts to surmount them have made valuable contributions to the psychology of learning. They have thrown much light also upon the genetic phases of mental development, the successive steps in mental functioning from birth to maturity. Finally, it should be added that they have helped, to a certain extent, toward some understanding of the still little-known relationship between the emotions and adjustment or learning.

Behavioristic psychology. When we endeavor to trace the limits of behaviorism, we emerge upon the chief battle-ground of psychology. The contest is waged not so much around the actual work and achievements of the behaviorists as around the implications of their viewpoint and the extreme pronouncements of some of their leaders. In fact, one is inclined to suspect that some of the more radical proponents of the school take a mischievous delight in shocking not only conservative psychologists, but religionists and philosophers as well. Therefrom has issued much excited protest and recrimination.

The popular tendency to regard behaviorism as a mechanistic, soul-less, materialistic conception of life, with consciousness a meaningless accident and the individual powerless to steer his own course, while no doubt fomented by some of its own adherents, really has no essential bearing upon the scientific studies carried on by the behavioristic psychologists. We are concerned, not with the variations in their philosophy but with their achievements. Even the definition of behaviorism is a matter of disagreement among its adherents, while Tolman, a scholarly behavioristic psychologist, takes issue with its prophet, Watson, upon the importance of glandular activities in an explanation of conduct. In fact, Watson, as publicity agent for the cult phase of the school, seems to have advanced various pronouncements which some of his scholarly colleagues are not entirely willing to accept. Warned by these differences to be cautious in our judgments, let us see what constitute the undebatable essentials in this system of investigating behavior.

Behaviorism assumes that all behavior responses result directly and automatically from physical stimuli. The mechanistic viewpoint of Herbert Spencer, with his contention that all human behavior can be satisfactorily explained in terms of chain reflexes, is a generally accepted principle of behavioristic thought. In their application of this principle, adherents of this school attempt to extend the physical concepts of the inorganic sciences to include psychological activities, and utilize strictly the methods of the physical laboratory. Extending somewhat, as Watson has said, the physiologist's concepts of stimulus and response, the behaviorist none the less insists upon the immediate and inevitable connection between them, and seeks to control behavior by the simple modification of one or the other without concern for any mediating influence of consciousness or even the central nervous system. The responses may represent an original hereditary reflex, including not only observable physical and emotional reactions, but also changes in glandular secretions with their influence on behavior, or may take the form of conditioned reflexes. The latter may in turn be explicit, observable habit-responses, or may be implicit, ranging from modified salivary action to thought, which the behaviorist regards as subvocal talking. The totality of these mechanically-determined responses make up human behavior.

In his methods of investigation, the behaviorist feels obliged to disregard any conceivable factors in the control of responses except those which are objectively susceptible of analysis, observation, and measurement. Consequently, the data compiled in the research studies of this group are, in general, notably accurate and painstakingly scientific findings.

Granting the restricted scope of studies in which exclusively objective phenomena are considered with total disregard of other possibilities, the fact remains that the behaviorists have emphasized and exemplified the scientific method, as perfected in the physical and biological laboratories, to a distinctly greater degree than any other school of psychologists. Moreover, their critical strictures upon the assumptions of other methods of approach have had a highly salutary influence upon all psychological study, and have gone far toward eliminating merely speculative conclusions.

In conceding this leadership and influence in methods of investigation, it is but fair to recognize the argument of other psychologists who insist that the research methods of the behaviorists have no inseparable relationship to their mechanistic philosophy. This distinction was emphasized by R. S. Woodworth, himself a leading psychologist, in an article[1] containing the following comment: "One would be proud to be the author of any one of numerous investigations made by behaviorists. One need not be a behaviorist to admire them. One need not have been a behaviorist to have made them."

Gestalt psychology. Among the newer systems of psychological investigation, the psychology of Gestalt has had increasing popularity and influence. The characteristic viewpoint of this system is the conception of experience at any instant as a unified whole with many interrelated phases, no one of which may be neglected in an attempt at a segregated analysis of any other element. The totality of the phases of experience at a given moment constitute an integrated *pattern* or *configuration,* terms which rather inadequately translate the German *Gestalt,* from which this system derives its name. A favorite analogy is the solar system. The motion of every celestial body in this group is influenced by its relationship to every other, so much so that the discovery of some of the planets was due to a search for the causes of strange behavior among the others. Similarly, one might illustrate with the case of an individual who goes to a play to write a criticism. He has had lobster for dinner, is wearing uncomfortable shoes, and is accompanied by two acquaintances, one congenial, the other uncongenial. His reactions during the play could not be accurately understood without taking into account the state of his digestion, the discomfort of his feet, the diverse sense of companionship, and his purpose in coming to the play. In fact, there are, no doubt, still other elements of environment and consciousness which affect his reactions.

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[1] Woodworth, R. S. "Four Varieties of Behaviorism," in *Psychological Review,* vol. 31, p. 264.

In the total pattern of an experience, certain elements tend to assume predominant importance, the others being subordinated to constitute the ground for the emphasized factors. These ground elements are nevertheless indispensable to the pattern, just as the background of a picture may determine its characteristic tone, or the subdued accompaniment give emotional warmth to a melody. At another moment the experiential pattern may rearrange itself, a new set of elements assuming the foreground and crowding the former points of emphasis into the background. The determining factor in producing such changes, or in establishing any new pattern, is the goal or purpose of the individual at that moment. Consequently, the followers of Gestalt emphasize purpose as the integrative factor in any experience, and the key to psychological interpretation.

While the advocates of Gestalt psychology stress function above analysis, they nevertheless recognize the necessity of applying some type of analysis to behavior patterns. They insist, however, that the selection of one element for temporary emphasis and critical analysis must not involve entire disregard of other elements. Kohler, one of the most prominent psychologists of this school, explains the Gestalt method of analysis in the following words:[1]

> We find the *genuine* parts of the field as segregated wholes and groups and, in these wholes or groups their genuine "parts" again as subordinate wholes or members.... I may, however, adopt a special attitude with regard to the field, selecting some of its members and more or less suppressing the rest. In many cases a change of organization will be the consequence of such an attitude and hence "analysis" of this sort involves a real transformation of sensory facts in Gestalt psychology. Of course, an analytical attitude is not the only one by which a change of organization may be produced. When we select certain members of the field, we can keep them together at the same time and so favor one special kind of "belonging together," instead of that which would prevail without our interference.

Method of study in Gestalt psychology. As has been previously suggested, we are interested at this time not in the detailed theories of the various systems of psychology which we are summarizing, but in noting the essential viewpoint, the method of investigation, and the significant contributions of each. In harmony with its characteristic conception of the inseparable totality of experience, Gestalt psychology takes the integrative and functional approach to the study of psychological phenomena. In the words of Koffka,[2] "We then begin with the organism in its environment, and study its reactions. Among these we may reckon also those which are usually termed consciousness." Instead of disregarding other phases of a behavior pattern to study a segregated element, the Gestalt psychologist prefers to maintain a comprehensive observation of the entire configuration, noting especially the altered reaction of the organism as a whole when a change occurs in any phase of the environment or in the purpose of the individual whose behavior is under observation — in other words, when any element of the total pattern is altered. There is constant emphasis upon dynamic, functional, meaningful relationships as the proper conception of experience. The essentially integrating factor in any pattern of experience is, as previously stated, the purpose or goal predominant at that moment.

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[1] Kohler, W. *Gestalt Psychology*, 1929, p. 183. By permission of Liveright Publishing Corporation.

[2] Koffka, K. "Introspection and the Method of Psychology," in *British Journal of Psychology*, vol. 15, p. 153.

Contributions of Gestalt. The most valuable service by this school has probably been rendered through the insistence upon unity and interrelationship in experience. In particular, their reiteration of emphasis upon "mental set" and the importance of the momentary background as influencing behavior and specific responses, has marked significance for modern education. The very fact that the viewpoint and method of study of this system of psychology must seek to comprehend unremittingly the total reactions of the organism to its environment results in some indefiniteness and confusing complexities, especially in comparison with a plan of study which frankly segregates a single element for simplification and analysis. It is true also that the followers of Gestalt are as prone as other schools to theorize beyond their established facts. The truth remains, however, that their principles parallel the complexities of actual experience, which is likely to be distorted through artificial simplification. The most impressive studies made by this group thus far have dealt with animal behavior and with abnormal or clinical cases. The continuation and extension of their investigations promise valuable aid to education.

The psycho-physical system of psychology. Another group of psychologists, for whom Bentley is probably the best known spokesman, accept the functional viewpoint, but stress the psycho-physical organism as the focus of study. From this standpoint, function is emphasized, not in terms of purpose or end, but as method of performance. Just as in a piece of electrical equipment the functioning of the apparatus is dependent upon connections and adjustments in the mechanism adapted to the character and voltage of the current, all involving complex factors of relationship, so the functioning of psychological processes depends upon the co-ordinated activities of both mind and body. To designate the interdependent activities of the mind and body, neither of which can function without the other, Bentley uses the term, psychomatic, as well as psycho-physical.

It would probably be fair to characterize this as an eclectic school of psychology, which retains the concept of consciousness but utilizes the methods of behaviorism for its study. While accepting functionalism as the most adequate approach to the interpretation of behavior, it redefines psychological functions as processes rather than as ends or goals. Bentley's statement [1] of this conception of function is as follows:

> To depict a function or operation in its own terms is always better scientific method than to substitute for it its end. To say that printing is a process which turns out books and newspapers is not descriptive. It gives no intelligible idea as to how the printing-press works.

Emphasis upon interrelationship of mind and body. With this conception of function, the psycho-physical psychologist is bent on observing just what happens in an act of behavior, and in noting the factors which play essential parts in making the total response possible or in determining its character. He emphasizes especially the interrelationship of mind and body in the performance of any function or process of behavior. He points out first that the body supplies the *vehicle* or physical mechanism without which normal functioning would be impossible. Even a slight derangement of the bodily organism may affect seriously the reaction process. He next stresses the fact that the body supplies the *energy* necessary to the normal response. When this energy is sapped by fatigue, drugs, or illness, even those processes usually regarded as strictly mental are disturbed or hopelessly obstructed in their functioning. In short, without the physical vehicle and physical energy by which they are made apparent and effective, psychological processes are practically non-existent.

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[1] Bentley, I. M. *The New Field of Psychology,* 1934, p. 360. By permission of D. Appleton-Century Company.

On the other hand, mind gives *meaning* and significance to these reactions and processes. Except within the limited field of inherited reactions, the physical mechanism would contribute only aimless and futile responses if it were not for the interpretive and selective influences of the mind. By means of this critical and directive contribution supplied by the mental side of the partnership, physical responses are modified and co-ordinated into a sequential process which may properly be called a function, in that unity and purpose are apparent. Upon this obvious interrelationship of mind and body, this school of psychologists base their conception of the proper methods of studying behavior and mental life.

Usefulness of this method of study. The investigation and interpretations of available data carried on from this point of view show helpful values through the study of rather comprehensive units of mental activity in their entirety and in their physical relationships. The extent to which behavior processes are affected, favorably or adversely, by specific physical factors, external or internal; the influence of maturity and of socialization upon mental functions; and the optimum conditions for various mental processes or functions — such problems as these constitute the focal points upon which the psychophysical method of approach is yielding useful data. Perhaps the most distinctive contributions of this school of psychologists has been in synthesizing and interpreting the results of studies along these lines, including information made available by other more strictly analytical psychologists.

Other methods and emphases. The foregoing outline and characterization of schools of psychology is meant to present only the more significant points of view in relation to a philosophy of education. No attempt has been made at minor distinctions or variations among the major fields of psychological thought. Nor has it been thought essential to mention certain eclectic schools which select and recombine elements from other schools. One obvious omission merits explanation. The Vienna group of "analytical" psychologists has stimulated much interest in and discussion of emotions and personality. Freud, with his description of the subconscious mind as the lair of suppressed desires to be exorcised by psycho-analysis; Jung, with his modification, reinterpretation, and rationalization of the Freudian doctrines; and Adler, with his studies of personality and the designations, "extravert" and "introvert" — all have touched in a stimulating and provocative way upon matters of much concern in educational thought. One is justified in suggesting, however, that these "analytical" case-studies have dealt almost wholly with abnormal and pathological subjects, and that the approach has been characteristically medical rather than educational. The conclusions reached have had, as yet, very little practical or definite applications for normal individuals. The suggestions relating to personality promise the greatest value. Tests have been developed which seem fairly reliable in distinguishing the extravert and introvert types, but their usefulness for educational planning is still speculative. Educators will, no doubt, continue to observe with interest the work of the group of analytical-medical psychologists, but more adequate confirmation of the usefulness of their proposals will be needed before any considerable value may be anticipated from them for basic educational application.

What approach is most useful for education? In the foregoing outline and discussion. we have noted a somewhat conflicting variety of points of view and methods of approach in psychological study. On the other hand, it is probably true that competent psychologists among all schools have far more in common in their thinking than their controversial discussions would suggest. To paraphrase a statement already quoted from Woodworth, one does not need to belong to a certain school to admire the studies of its followers; one does not even need to belong to that school to have made the studies accredited to it. In assembling our facts of psychology as a basis for a philosophy of education, we are not limited to a single school as offering always the one best or most useful approach. When emphasizing scientific measurement and desiring strictly objective accuracy, one is inclined to favor the behaviorists. Again, when intent upon the importance of social adjustments, personality integration, and character development, one listens more readily to the proponents of Gestalt or some other of the functionalists. It will probably be the wisest policy to scrutinize critically the offerings of each and to select the data best adapted to our needs, insisting always upon the most scientific verification possible of the findings in any field.

Such a policy as suggested will be followed in the next chapter, when an attempt will be made to indicate the nature of the psychological information essential to a modern philosophy of education. The educator needs to ask the psychologists certain important questions. It will be our task to examine the implications of these questions and to appraise such answering data as may be available. It is hoped also that the characterizations of the different schools of psychology and the distinctions as to their points of emphasis may have more than temporary usefulness for the student of education. Intensive studies and constant research are being carried on in all these fields, requiring frequent revisions of the educational interpretations of these findings. The student who has a reasonably clear understanding of the point of view and the psychological assumptions from which a study has originated can more readily and fairly appraise the new contributions as they appear, and will be less prone to confusion from the apparent conflicts due to diverse methods of approach or terminology. It is wise to remember always that education still has need of more complete psychological foundations, and that each new contribution from any viewpoint should be eagerly welcomed, but critically evaluated in the light of the basic conceptions from which the investigation proceeded.

TOPICS FOR DISCUSSION

1. Give examples of useful but apparently conflicting conceptions among psychologists. Under what circumstances might these conflicts be ultimately reconciled?
2. Some texts in psychology seem to give more attention to anatomy and physiology than to mental activities. What are the arguments for and against such a plan of approaching the subject?
3. It has been said that the Gestalt psychologists present not so much a separate school of psychology as a philosophy of psychological interpretation. What basis do you see for such a statement?
4. State the divergent points of view held by different groups of "functional" psychologists, and show the basis for such variation.
5. Woodworth declares that psychologists are much closer together in practice than in theory. Give examples tending to confirm this conclusion.
6. What justification is there for the reference to behaviorism as occasioning the "chief battle-ground of psychology"? Why has behaviorism provoked attack from so many quarters, even outside the field of psychology?
7. What value for education do you see in the work of the Freudians and related analytical psychologists?
8. To what extent is it possible to maintain an eclectic and neutral point of view in selecting pertinent materials from the various schools of psychology?

SUGGESTED EXERCISES FOR STUDY AND DISCUSSION

1. *Representative:* (1) Baldwin (2) Freud (3) Koffka (4) McDougall (5) Titchener (6) Watson
   Emphasis: (a) inborn desires (b) muscular and glandular

activity (c) nervous system (d) nervous and mental disorders (e) organized wholes (f) sense organs

Status: (I) disappearing (II) holds to a non-material source of activity (III) now dominant (IV) opposed by theologians (V) popular among social workers (VI) resists an over-simplified psychology

Apply the above to each of the following schools of psychology:

—— —— —— *Behaviorism* —— —— —— *Psychoanalysis*
—— —— —— *Functionalism* —— —— —— *Purposive (Hormic)*
—— —— —— *Gestalt* —— —— —— *Structuralism*

2. —— The Gestalt theory of learning stresses (1) conditioned reflex (2) insight (3) trial and error

—— A classic experiment in conditioned reflex was performed by (1) Freud (2) James (3) Kohler (4) McDougall (5) Pavlov

—— A leader in animal psychology has been (1) Binet (2) Decartes (3) Dewey (4) Spearman (5) Thorndike

—— The greatest stress to an objective study of psychology is given by the (1) behaviorists (2) functionalists (3) Gestalt (4) psychoanalysts (5) structuralists

3. T. F. By this time psychologists should be in agreement.
T. F. Structural psychology accepts the introspective method.
T. F. Structuralists ignore the phenomena of consciousness.
T. F. Structural psychology has contributed nothing to education.
T. F. Functional psychology stresses conduct.
T. F. Functionalists have contributed to laws of learning.
T. F. Behaviorism has contributed but little to education.
T. F. Behaviorism assumes all responses are due to physical stimuli.
T. F. Conditioned reflexes have a place in behaviorism.
T. F. John Dewey has been classified as a functionalist.
T. F. Herbert Spencer could be classified as structuralist.
T. F. E. L. Thorndike is classified as a hormic psychologist.
T. F. Kohler is classified as a behaviorist.
T. F. The scientific method is exemplified by the behaviorist.
T. F. Total experience is stressed by Gestalt psychology.
T. F. Mental set is emphasized by behaviorism.
T. F. A psycho-physical system of psychology would be eclectic.
T. F. Psychic investigation is limited to introspection.
T. F. Education is interested in human psychology only.
T. F. Abnormal psychology has no great educational significance.
T. F. Any school of psychology may make useful contributions to the field of education.

4. Look up some recent text books in general psychology and see if you can classify them according to the psychological schools they seem to stress.

SELECTED REFERENCES FOR FURTHER STUDY

Boring, E. G. *A History of Experimental Psychology.*

This gives an extended discussion of early psychologists and something of behaviorism and Gestalt Psychology.

Heidbreter, Edna. *Seven Psychologies.*

This includes a survey of structuralism, the psychology of William James, functionalism, behaviorism, Gestalt, Psychoanalysis, and dynamic psychology.

Kilpatrick, W. H. *Source Book in the Philosophy of Education.*

Chapter VI gives selected quotations from psychologists regarding the psychological nature of the human individual.

Kohler, W. *Gestalt Psychology.*

This is a good presentation of Gestalt by one of its prominent leaders.

Murchison, C. *Psychologies of 1930.*

This is a collection of articles by leaders of each school of psychology.

Murphy, G. *An Historical Introduction to Modern Psychology.*

All schools of psychology are discussed.

Ragsdale, C. E. *Modern Psychologies and Education.*

Part I discusses psychological theories underlying education.

Watson, J. B. *Behaviorism.*

This is a popular treatment of the behavioristic schools of psychology by one of its chief leaders.

Woodworth, R. S. *Contemporary Schools of Psychology.*

This is an impartial survey of contemporary psychology.

CHAPTER VII

THE PSYCHOLOGICAL BASIS OF EDUCATION
(*continued*)

PRINCIPLES AND THEIR APPLICATIONS

What help should be sought from psychology? In the previous chapter we took note of the various ways in which psychologists regarded their field, and what constituted, in their eyes, the legitimate materials and methods of investigation. It is now our task, in the light of this knowledge of the aims and limitations of their studies, to make some evaluation of their contributions as a basis for educational planning. Some criteria for such an appraisal will be suggested by listing the more important questions upon which educators must seek assistance from the psychologist.

We already know that man inherits certain native equipment in the way of capacities and tendencies, and upon these are built the complex adjustments which education attempts to direct for the good of the individual and of society. What is the nature and extent of this inherited equipment, both in the way of automatic reactions and in incompletely organized tendencies, susceptible of wide modification through learning? How can the natural interests and emotional drives of the individual be best utilized to stimulate learning? How great is the range of differences in learning capacity among individuals and class-groups, and in what significant forms do these differences appear? What are the effects of age and maturity upon learning ability and readiness of response? How are the rate and quality of learning affected by specific environmental factors, or by intraorganic conditions? To what extent does proficiency acquired in one field of learning promote improved performance in other fields; that is, how great is the transfer value of training? Under what conditions and by what processes can the great array of desirable habits, skills, and appropriate psycho-motor responses, constituting the automatic mechanism of civilized behavior, be most surely and most economically established? Through what activities does the mind best acquire and retain knowledge? To what extent and by what means can the feelings be led to find satisfactory expression in worthy enthusiasms, refined appreciations, and commendable activities? Such queries as these suggest the major points upon which the educator must seek psychological data as the basis for any sound plan of procedure.

To some of these questions the psychologists have provided clear and definite answers. To others there are only partial replies, but sufficiently indicative of broad limits and principles to afford at least a series of trail marks by which to guide our general educational course. Some of our questions, unfortunately, especially those relating to the control of emotional influences, as well as to personality and character development, have not yielded adequately as yet to scientific investigation. The fragmentary data in these areas, while suggesting tentative inferences, do not warrant confident conclusions or safe generalizations. In lieu of an organized and well-substantiated body of facts for assured guidance along some stages of our educational program, we shall have to rely upon accumulated experience and the thoughtful counsel of the best qualified workers in those fields. Education must go on, utilizing verified findings of psychology wherever available and supplementing these, in the diminishing areas not yet fully investigated, with the best-tested hypotheses which logic and experience can provide.

Native equipment. The starting point in the process of education must be the native equipment of the child. This constitutes the original capital and by its limitations and possibilities will determine the scope of possible education. The fact that the child is a human being predetermines to a certain extent the character of its future behavior. At the same time it possesses a tremendous advantage over the young of other animals in that so small a part of its reactions are definitely and finally fixed by the inherent character of the nervous system, and consequently may take on a comparatively wide variety of profitable adaptations and modifications. Therein, of course, lies the possibility of education.

This stock of inherited-behavior capital is conveniently classified as reflexes, instincts, emotions, and capacities. The first term commonly refers to those reactions occurring in various parts of the body with practically automatic regularity when a given stimulus is met. The eye-wink when a blow threatens and the knee-jerk when the patellar tendon is struck are familiar. While numerous, the reflexes have no great educational importance, although the behaviorists, by extending the meaning of the term, make the conditioned reflex the basis of practically all learning.

The question as to the number and nature of human instincts has long been a point of dispute among psychologists. Thorndike listed the instinctive tendencies under nine headings, and emphasized their usefulness as starting-points and drives toward learning. Woodworth proposed a somewhat longer list but grouped its items under three general headings — satisfaction of bodily needs, social responses, and play activities. Watson challenged almost the entire list, and except for the native emotional responses of fear, love, and rage, would refer practically all so-called instinctive behavior to reflexes, in accordance with his somewhat broad use of the latter term. The controversy is partly one of definition, partly due to the vague and incomplete character of most instinctive tendencies in the human being, and wholly a matter of classification which by its very nature must be arbitrary.

Incompleteness and adaptability of native tendencies. For practical purposes, an instinct may be defined as an inborn tendency to perform or to find satisfaction in certain activities. The nervous adjustments essential to the expression of this impulse may be more or less complete at birth. As noted in a previous paragraph, most lower animals inherit these adjustments practically complete. For example, a pig or a chick, from the first day of its life "knows how" to do all the essential things it will ever desire to do. Such adjustment has immediate advantage but closes the door to modification of behavior; that is, to learning other and better ways of acting. In contrast the human infant is helpless. The countless urges which it will feel toward expression, achievement, and participation are for the most part without final, specific nervous and motor adjustments for their satisfaction. Rich compensation lies in the fact that there is a correspondingly wide range of possibilities for adaptation, modification, and improvement in acquiring acceptable behavior-responses for the fulfillment of these urges.

This incompleteness and consequent adaptability of our native tendencies may be illustrated by two characteristic activities. Man has instinctive urges toward manipulation of materials and toward vocal expression, but, as Woodworth has well said, man is "the most pottering, the most hem-and-hawing of all animals." Through his pottering, however, he learns to build, to invent, and to fashion his complicated structures, instead of weaving, as birds do, always the same shelter as his ancestors used. Because he "hems-and-haws," he tries, selects, and develops a marvelous variety of means of expression, instead of reproducing only ancestral calls and sounds as do the dog, the pig, and the fowl.

In our consideration of instinctive tendencies, two important facts should be emphasized, even at the risk of apparent repetition. Without the inborn urge and groping toward a particular type of expression or activity to provide the initial point of departure, education would probably be impossible. Only through the fact that these impulses have no ready-made channel of organized activity through which to find satisfactory outlet is progress possible. Man has, for example, a vague but impelling urge to seek social approval. This furnishes the driving power for learning the co-operation, self-sacrifice, and thoughtful courtesies essential to modern social life. The adaptability of this tendency permits the progressive substitution of more socially desirable forms of behavior and thus the evolution of better social customs.

Our emotional inheritance. Closely related to the natural impulses just considered, in all of which there is an inseparable element of feeling, are the original emotional responses. Mention has just been made of the fact that Watson was able to find evidence, in his study of very young infants, of only three original types of emotional response — fear, love, and rage. Whether other distinct forms are inherited or the varied emotional responses of later life are merely modifications and combinations of this original trinity remains one of the many unanswered questions relative to the emotions. The fundamentally important fact is that these surges of feeling, affecting the whole organism through inhibiting or stimulating physiological activities, glandular secretions, and even assuming temporary control of the whole stage of consciousness, have profound educational significance. They tend to become attached, for better or worse, to situations, special objects, ideas, beliefs, personalities, institutions — to almost any striking phase of experience. Through such association they give emotional fervor to ideals, convictions, interests, social attitudes, and enthusiasms, or to prejudices, resentments, dislikes, antipathies, embittered attitudes, and subversive purposes. The educational implications and possibilities of directive control of these emotionalized outcomes of experience will be treated in a subsequent paragraph. It should suffice now to mention that the blunders and neglect of teachers in dealing with emotional problems add vastly to the work of consulting psychologists, psychiatrists, juvenile courts, and corrective institutions.

Capacities and variations. While the beginning of a learning adjustment is dependent upon some initial tendency or partial set in the nervous system, it is equally true that the ultimate limits to which learning may be carried depend strictly upon the innate capacity of the individual. Some of the most impressive contributions of psychology have dealt with demonstrations of the wide variations in practically every type of learning capacity, and in developing reasonably reliable techniques for the measurement of such differences. On the whole, it may be said that the more definite and specialized the type of capacity under investigation, the more accurate and useful is the measure which can be devised. Very reliable tests for estimating an individual's aptitude for the mastery of specific fields of subject-matter are now available and are being constantly improved and extended.

Variations in general intelligence are obviously great, but the term is difficult to define. Consequently, the interpretation of the measures of ability as revealed by intelligence tests should be strictly in conformity with the definition of general intelligence assumed by the makers of the test given. For example, a common practice in compiling such tests is to prepare a series of problems or tasks of increasing difficulty and presumably new to the person to be tested. His success will depend upon the extent to which he has drawn conclusions and meaning from his previous comparable experiences and can apply these generalizations to the solution of the problem before him. Such a test is, therefore, a measure of one's ability to transfer and apply the inferences derived from the solution of similar problems — in other words, to do abstract thinking. In so far as success in school depends upon this ability, the test is a valid measure of probable school success and of the capacity most frequently designated as general intelligence. The same test, however, does not necessarily measure one's ability to deal directly with concrete materials or to devise clever adaptations of these materials for practical ends. Nor does it surely test ability to make social evaluations and adapt social behavior appropriately in the light of them. Many will contend that success in either of these latter situations indicates genuine intelligence. Hence the warning against unwarranted generalizations as to the significance of any specific test, based upon corresponding assumptions as to the meaning of intelligence, should be kept in mind.

Individual and group differences. As has been pointed out in Chapter V, the wide variations in physical characteristics and physical abilities are apparent to everyone. The difference in mental traits and capacities are even greater. Being born long or born short applies to mental as well as to physical stature, only more so, for the difference in learning capacity between a genius and an idiot is relatively much greater than that between the tallest and the shortest persons. This range of differences holds with regard to all specific traits, such as visual ability to discriminate in colors and color-combinations, hearing ability to distinguish tones and musical intervals, or ability to comprehend mathematical computations. Protests against the traditional conceptions and practices based on a false assumption of uniformity in learning performance have been heard for many years. The verification and emphasis lent by psychological studies during the past quarter-century have drawn general attention to the necessity of recognizing individual differences in learning capacity, and most modern school programs offer at least a gesture of consideration to these variations. Some evaluation of the various provisions for ministering to such needs will be undertaken in a later division of this book.

Although differences in ability relating especially to the acquisition of knowledge and skills have been well studied and given some appropriate educational consideration, the same can hardly be said with regard to the equally great divergences in temperament, sensitiveness, and emotional responses. A teacher, mistaking uniformity for fairness in dealing with a disciplinary situation, issues reprimands which rattle ineffectively against the thick-skinned defenses of one amused offender, while the same words inflict almost intolerable suffering upon the sensitive soul of another child. Some individuals are stolid and untouched by disturbing situations; others are emotionally alert and harshly stirred. Some control readily their impulses, while others lose control under slight provocation. The child of artistic sensitivity and capacity for fine appreciations finds emotional torture in the methods of treatment considered appropriate for the so-called "average" child and builds up anti-social defenses, with disastrous possibilities. Some individuals resolve their emotional conflicts easily, others are profoundly upset by discordant emotional factors and can recover peace of mind only with great difficulty. Psychology has done more to reveal the serious facts in this connection than it has to provide reliable methods of dealing with them. Until such guidance is available, the facts would counsel the use of sympathy, consideration, and common-sense in dealing with obvious variations in temperamental and emotional responsiveness.

Differences due to race and sex. One other type of differences should be considered, mainly from the need of dealing intelligently with popular misconceptions regarding them as well as with the facts themselves. These are group differences, especially those characteristic of race or sex. The Army Alpha tests produced abundant comparative data as to racial differences among enlisted men during the War, particularly involving information and resourcefulness in problem situations. The white men seem to hold a definite superiority in aptitude for "abstract" thinking over the Negro and Indian groups. Later studies, notably those by Murdock, Ferguson, Porteus, and Waugh apparently confirm this, although no very significant advantage of the white race over the Orientals has been established by such studies. The racial differences shown do not in any way warrant the claims of superiority often heard. Ferguson's conclusion that, in spite of lower averages, there are comparatively few whites who have a greater intelligence than the highest of the Negroes and correspondingly few Negroes with less intelligence than the dullest of the whites, holds true for the overlapping scores of all racial groups. Temperamental differences are apparently much more pronounced. The evidence seems to indicate that other races are at least the equal of the white in ability to acquire manual dexterity or skill in dealing with materials and processes. The conclusion seems warranted that an educational program sufficiently comprehensive to care properly for differences among children of the predominant racial group will offer adequate provision for the needs of all. A more detailed discussion of this point, along with consideration of differences due to sex, will be found in chapter XVII, in which individual differences of various types receive special attention.

Effects of age and maturity. There has long existed a popular belief that there are definite stages in the development and maturity of an individual at which various types of learning can be most easily mastered, and that, once the appropriate age is passed, learning of that kind is possible only at the cost of greatly increased time and effort, if at all. James, in his somewhat rhetorical comments on the wax-like plasticity of youth and the adamant set of the nervous system after maturity, seems to have greatly exaggerated whatever elements of truth the belief contains. Careful studies indicate that the curve of learning ability rises steadily up to late adolescence, with no indication of decrease in any essential phase prior to age twenty-five. After this point, according to Thorndike's studies on adult learning, there is a period of approximately twenty years when the decline in learning ability is so slow as to have no great significance. Surprisingly enough, he found that childhood is not the easiest time at which to learn a foreign language, and that, with equal interest and equal native capacity, adults of twenty to forty years of age can learn better than children of eight to twelve. In Thorndike's own words:[1]

> In general, nobody under forty-five should restrain himself from trying to learn anything because of a belief or fear that he is too old to be able to learn it. Nor should he use that fear as an excuse for not learning anything which he ought to learn. If he fails in learning it, inability due directly to age will very rarely, if ever, be the reason.

The apparent exception to the general principle just noted relates to those skills involving delicate muscular adjustments which must be begun fairly early in life and practice continued through a period of years. In all other phases of learning, age is of much less importance than interest and mental background. Wasted effort and unsatisfactory results follow when a child is asked to learn processes or materials for which the necessary interest and interpretive experiences are not yet present. Corresponding futility ensues when adults undertake an extended learning task under the impulse of a transient motive which is unable to persist against the conflicting interests, responsibilities, and habits which tend to absorb the available mental energy of adult life — a situation usually complicated by a growing fondness for ease and effortless entertainment during the leisure moments which mature years may provide us.

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[1] Thorndike, E. L., and Others. *Adult Learning*. New York, 1928. By permission of The Macmillan Company, publishers.

Interest and motivation. In preceding sections of this chapter, the importance of interest as a basis for learning has more than once been emphasized. Psychological studies give increasing confirmation to the point of view which rates interest as not only a major but indispensable factor in effective learning. An interesting example was the study made by Book, at Indiana University. Two groups of students were engaged upon the study of certain subject-matter. One group was encouraged to develop interest by keeping records of self-improvement, was frequently asked to report on devices found favorable to progress, and, in general, was stimulated to put forth eager effort at advancement. The other group was taught without special effort to arouse interest. By the end of ten practice periods, the first group had surpassed the second by an average score of ten points on the progress scale, an advantage of 25 per cent in total range of improvement. For the remainder of the experiment, the methods of teaching were reversed. Immediately, the scores of the second group rose, soon surpassed those of the first group, and exceeded them by an average of twelve points at the end of the experiment. It should be noted in passing that the relative progress of these two groups was not the contrast of an interest group and a non-interest group. It reflected, rather, the relative advantage of a vigorous interest over the mediocre interest which originally prompted the students to enroll in the subject, supplemented by the usual desire to do acceptable passing work.

The traditional practice of relying upon negative stimulation — the direct or implied threat of unpleasant consequences to follow failure, as the chief means of securing application and study, while still too prevalent in the class-room, has no longer a defensible place in modern educational thinking. Its ineffectiveness and poverty of permanent results have been convincingly proved. Educators now divide upon the question as to how dominant the consideration of interest should be in an educational program. One wing, adopting the designation "progressive," insists that interest should have foremost importance, and that questions of curriculum, methods, and organization should be determined in their relationship to it. The conservative wing, while conceding that there is little effective learning without interest, would make it a subordinate or contributing element, utilizing it to motivate the study of materials not intrinsically enjoyable but possessing sufficient social value to justify their mastery. A fuller consideration of these two points of view and their implications for educational practice will be found in a later chapter.

The basis for the motivation of school studies has already been implied. The instinctive urge which children feel toward social approval, communication, analytical curiosity, manipulation of materials, puzzle-solving, and other familiar forms of so-called "natural" interest are fortunately susceptible of wide adaptations and guidance. As a matter of fact, practically all of the materials which merit a place in a modern course of study because of their permanent social or personal value have been developed in response to natural human aspirations and deserve to be included in the curriculum, if their place there is at all justifiable, because they provide the most satisfactory means known for fulfilling the urges and needs of humanity within the conditions established by modern civilized life. Education involves socializing and civilizing the child. That is, it means the understanding and acceptance of the essential elements in the great co-operative social relationships which have grown out of human yearnings and the process of continuous improvement in their expression. True motivation, then, is guiding the child to find, as expressions for his own urges and desires, some of the essential achievements and satisfactions which have been slowly evolved and tested through similar aspirations of humanity and which constitute the basis of our still-evolving civilization. Specific applications and illustrations of this principle will be treated in another section.

Influence of physical conditions. The extent to which learning and mental efficiency are affected by physical factors has been a matter of careful study by psychologists. Industry has also been interested in what is termed the psychology of efficiency, and some of the findings resulting from investigations in that field have equal value for general education. The total array of data bearing on the influence of physical conditions is too great for analysis here, but certain significant facts should receive comment along with the general recognition of the importance of such considerations in educational planning.

One of the most important considerations in connection with learning activity is the bearing of the environment on fatigue and lowered efficiency. For example, the effort to concentrate in a noisy environment involves a heavy drain upon the nervous energy. Laird found, in a comparative study of typing under noisy and quiet conditions, that 19 per cent more energy was consumed in the work in a noisy room and at the same time there was a decrease of over 4 per cent in speed. Other studies indicate that activities less mechanical in nature than typing suffer still more from distracting noise. On the other hand, Thorndike concluded that a favorable mental attitude could counteract, temporarily at least, what are generally regarded as detrimental conditions of environment. In a study made by him and others it was shown that adults, under strong motivation, performed as well and made as much learning progress when working in hot, humid, stale, and stagnant air as under perfect temperature and ventilation conditions. The entire validity of his conclusions has been challenged on the ground that the comparatively brief periods of four or five hours enabled the subjects, working under strong pressure, to withstand the drain of diminishing energy, and that no measure was taken of deleterious after-effects. There seems little question that continued distractions and unfavorable environment sap both the nervous energy and the morale of students.

It is also quite well established that the intra-organic conditions have, in general, fully as much influence upon effective mental work as do the physical surroundings. Social influences which induce a happy sense of working companionship are distinctly advantageous. Experiments have demonstrated that the normal, subdued sounds of busy fellow students engaged in similar tasks are definitely more favorable to study than solitary quiet. The influence of adolescence upon interests, moods, and mental life has received attention in an earlier chapter of this book. General hygienic factors cannot be given detailed consideration here, but their importance should be recognized in any comprehensive enumeration of educational responsibilities and influences.

The transfer of training. Mention has previously been made of the traditionally accepted theory of general mental discipline. This conception of education held that the training of one's mental powers, the "sharpening of one's wits" by exercise upon material peculiarly appropriate for such service, would enable the student to perform effectively in new and unaccustomed fields of mental activity. This theory was not seriously challenged until the early part of the present century, and the statement is probably true that it still holds a dominant place in the educational philosophy of a majority of the teachers in the secondary schools of America. On this account it is of especial importance to examine the psychological evidence as to its validity.

In order to understand fairly this point of view, and, incidentally, its persistent present influence, we shall quote from the two most widely read books on teaching in use up until a generation ago. Page, in his *Theory and Practice of Teaching*, says:[1]

> The discipline of the mind, then, is the great thing in intellectual training; and the question is not how much have I acquired? but, how have my powers been strengthened in the act of acquisition?

White, in his famous *Elements of Pedagogy*, states the theory in the following way:[2]

> ... The developing of power should be made the leading aim of teaching. Knowledge is necessary to enlighten and guide in all human effort, but mental power gives acumen, grasp, strength, poise, inspiration, and these are the winners of success in all the duties of practical life.... If my mind were a tablet, and with a sponge I should erase every fact learned in school and college, and not directly applied in the arts there acquired, I should not be very poor, but were I to lose the mental power gained by the mastery of these facts, so many of which were long since forgotten, I should be poor indeed.

Advocates of this theory have issued more cautious and conditional statements in recent years, in defending it against critics, but modern discussions on the educational values of the older school subjects frequently contain renewed confessions of faith in the doctrine. It offers such a convenient justification of the subject-matter one is prepared to teach, and simplifies so happily so many educational problems, that there is small wonder at the persistent affection in which the theory continues to be held. The psychological evidence on the question is interesting.

James was the first psychologist to cast doubt on the general value of memory practice. After measuring the rate at which he could memorize the lines of a certain poem, he then spent twenty minutes a day for thirty-eight days memorizing lines from *Paradise Lost.* He then returned to the first poem, and found no improvement whatever in his rate of memorizing. At the beginning of this century, Thorndike and Woodworth experimented with the transfer of improvement in estimating areas, lengths, and weights to other activities of similar nature. They attributed the slight degree of transfer found to "identical elements" in the function practiced and the function tested. Bagley found that training in neatness in preparing written work in one school subject failed to carry over to the written work in another subject. The past quarter-century has produced a host of studies usually dealing with the extent to which training in one school subject transfers beneficially and produces improved performance in another field. Too often these "experiments" have been undertaken to confirm previous convictions, but out of the controversial data some conclusions are justified.

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[1] Page, D. P. *Theory and Practice of Teaching*, 1885 edition, p. 97. American Book Company, New York.

[2] White, E. E. *The Elements of Pedagogy*, 1886, p. 123. Van Antwerp, Bragg & Co., New York.

A fair summary of the established facts relating to the transfer of training values is that some transfer unquestionably occurs; that the amount of such transfer may be considerable with closely related and similar functions; that the amount diminishes as functions become more unlike; that the transfer is usually negligible in distinctly different functions; and that the amount of transfer varies significantly with individuals, and groups of individuals, depending upon the quality of intelligence possessed. To a certain extent, the amount of transfer can be increased by methods of teaching, especially when the teacher emphasizes elements of similarity to other fields of learning and induces the pupils to find applications and relationships outside the subject itself. Probably the most significant of the conclusions just summarized is the one linking transfer with level of intelligence, and note should be taken of what it implies.

In an extensive study directed by Thorndike with a view to determining the relative usefulness of various high-school subjects in improving reasoning ability, it was found that no significant difference in such training value existed between the various subjects, *provided the pupils were equal in general ability.* Pupils ranking in the highest one per cent in general intelligence gained, during one year's high-school work, an average of 20.5 points, while those in the lowest one per cent gained only 1.5 points, regardless of the studies they had taken. The explanation seems obvious. In our discussion of intelligence testing, presented in the early part of this chapter, it was noted that the characteristic quality measured by such tests was the ability to generalize and apply the meaning and results of past experiences. Pupils possessing this ability in a high degree will naturally incline to exercise it in mastering the principles of any subject, thus developing general reasoning ability which may be applied to other fields. On the other hand, pupils of inferior general intelligence must face each new problem with practically no carried-over advantage except as the new situation contains elements essentially identical or strikingly similar to those encountered and mastered in the past. It seems futile, therefore, to have pupils of this type pursue subjects which are retained in the curriculum more for their asserted disciplinary value than for their intrinsic usefulness and direct bearing on modern life needs.

Types of learning activity. The most general classification of learning activities recognizes three types: knowing, feeling, and doing. Perhaps the most important contributions of psychology to education are in the nature of studies which throw light on the processes by which each type of learning is acquired, and the conditions most favorable to its achievement. As a matter of fact no type appears alone, but always with at least a trace of the others. For example, the individual who is acquiring skill in skating will incidentally learn information at the same time, and inevitably experience emotional changes involving perhaps triumph or gloom. The Gestalt psychologists, and many educators, emphasize strongly this total unity and inter-relation of elements in a learning experience. Regularly, however, one type will predominate, and even the groups just mentioned will approve the kind of analysis which focuses major attention for a time upon the characteristic feature of the mental response. Only in some such way could the psychological facts be assembled which make possible the substitution of educational direction for the wasteful, ineffective, or even harmful forms of response resulting from indiscriminate trial-and-error.

The acquisition of habits and skills. No field of psychological study has been better explored or more definitely mapped than that which covers the establishment of habits, skills, and automatic responses. In general, those reactions tend to be repeated and to become fixed which yield satisfaction, while those which bring annoyance, either through the character and circumstances of the reaction itself or through the unsatisfactory results, tend to be avoided. Practice tends to confirm the particular form of response or activity, but the process does not attain the precision and reliability of genuine skill unless the repetition follows closely a specific pattern; that is, the practice must be correct and uniform. There is wide variation in the number of practice-repetitions necessary to attain a satisfactory level of skill, depending largely upon the degree of interest and vigorous purpose on the part of the learner toward the process to be mastered. The distribution of practice in fairly brief periods over a considerable extent of time is far more effective than an attempted concentration of practice sessions; a limitation due partly to fatigue and diminishing attention, but suggesting also a physiological accompaniment in growth and development of corresponding neural connections. The implications of these principles and their application to classroom procedures will receive our consideration in a later chapter.

The mastery of knowledge. If knowledge could be adequately mastered by a mechanical repetition of facts, there would be little need in that field for any other principles of learning than those just enumerated as basic to drill for habit-formation. In fact, the traditional "hammering in of facts" assumed that retention could thus be assured, and that useful applications of the facts could be made when needed. Both assumptions have been found largely false. Other conditions being equal, the retention of facts is in direct proportion to their assimilation through useful applications and meaningful associations at the time of learning. The highest rate of retention is for those facts which the learner has discovered for himself in a quest for needed information. The lowest rate is for material without essential meaning or significance to the learner. The latter material can be retained only through continued and persistent repetitions. On the other hand, very few repetitions are necessary for the retention of material the importance of which has been vitally recognized through its direct applications and associations.

The mastery of knowledge, however, involves something more than the mere retention of facts in "dead storage." Too often there has been justification for the charge that school graduates knew many facts, but were unable to use them; that they had been taught to remember, but not to think. The ability to use facts and principles effectively in the solution of practical problems can be developed only in problem situations. Fortunately, the kind of learning situation which impels the pupil to discover and apply information in the solution of his problems is precisely the kind most favorable to the retention of that information. The fundamental importance of this relationship from the standpoint of teaching methods will be at once apparent.

Emotional outcomes of learning. We all know, even from superficial observation, that profound emotional influences affect the reactions of the school child. We have already noted the tendency of these deep feelings to fasten upon phases of experience, resulting, at their worst, in fierce aversions, bitter prejudices, and lifelong unhappiness. At their best these emotional currents give vitality and warmth to rich appreciations, altruistic enthusiasms, and ideals of social relationship. The old idea that these outcomes, good or bad, were the inevitable outcroppings of hereditary disposition is no longer generally held. The attitude of most teachers now is more hopeful than confident in the matter of controlling these outcomes. Psychologists give us only sketchy and intermittent glimpses of the course of these underlying currents, but the utmost use must be made of the data available.

Probably the fact of greatest positive value is that desirable attitudes, standards of good taste, ideals of conduct, and similar essentials to useful happy living can be emotionalized and acquire motive force only through genuinely emotional experience. This may be direct participation, or it may be vicarious, as many very stirring experiences are, when one shares sympathetically and deeply in the emotional adventure of another. Teaching, preaching, and lecturing leave the hearer cold unless a genuine sympathetic fervor has been kindled to fuse feelings and ideas into dynamic ideals. This vital response must come from the learner himself, either aroused by direct activity, or by re-creating past emotional experiences.

On the side of protective and preventive measures to avert the hazards of emotional conflict, the psychiatrists and medical psychologists have good advice to offer. Their impressive data as to the disastrous consequences which may follow educational blunders give weight to their warnings. Never force a highly emotional issue. A sympathetic teacher can anticipate and avoid such clashes, and without sympathy sufficient to rise above an emphasis on authority and superior knowledge, one should not be a teacher. The sensitive, morose, and nervously unstable child needs patience as well as sympathetic help while making his adjustments to a harsh, obtrusive, and exasperating society, if he is not to suffer permanent maladjustment. Rather than dealing summarily with cases of habitual emotional difficulty, the teacher will be wise to refer the problem to a specialist in that field.

Although both education and psychology have made little progress in developing positive techniques for emotional education, the situation is becoming more hopeful. The more recent genetic studies of native emotional patterns in infants have been illuminating. They indicate the danger of regarding all emotions as innate reactions to specific situations, and show that emotional life is probably as capable of modification and guidance as any other phase of development. This conception opens the gateway to a relatively new and extremely important avenue of educational influence.

The measurement of educational products. This chapter should not be closed without mention of the great diagnostic and corrective service of psychology to education through its techniques of measurement. Personal opinion and subjective speculation as to the efficiency of educational procedures have largely been eliminated through standardized, objective methods of testing. The slow flounderings of trial-and-error have been much accelerated in experimental teaching by the facilities for early and reliable evaluation of results. While these methods of measurement have been developed to a high degree of completeness and reliability for skill and factual learning, scant assistance is yet available for determining improvement in attitudes, appreciations, and similar types of emotionalized responses. Earnest studies along this line are in progress, with some promise of helpful achievement. It is at least encouraging to know that psychologists recognize this responsibility, and are laboring to add this service to the accumulated array of data which provide the psychological basis for education.

TOPICS FOR DISCUSSION

1. In what respect is it true that man is inferior to many lower animals in his instinctive equipment? Wherein is the reverse true?
2. What are the dangers of misinterpretation in the use of "intelligence" tests? Show how valuable use can be made of them without incurring such dangers.
3. Why is it so difficult to devise satisfactory tests of emotional characteristics?
4. Name some school subjects in which, according to popular belief, one sex shows marked learning superiority over the other. What scientific evidence is there to confirm this belief with regard to any of these subjects?
5. How do you account for the long and affectionate esteem in which the theory of "formal discipline" has been held by high-school teachers?
6. One frequently hears references to the conflict between "reason" and "instinct." In what psychological sense is each term used in such expressions?
7. Show how all three types of learning are present to a marked degree in such an experience as opening a bank account or solving a puzzle.
8. What relationships exist between the instincts and the emotions?
9. It is often said that certain primitive human instincts should be eradicated. Discuss the possibility and desirability of such an undertaking.

SUGGESTED EXERCISES FOR STUDY AND DISCUSSION

1. Explain the following terms: concept, complex, conditioned reflex, conscience, consciousness, curve of learning, ideal, imagination, inferiority complex, integration, law of multiple response, multiple personality, overlearning, percept, personality, phantasy, projection, rationalization, reasoning, recollection, subconscious, will power.
2. At what advanced age did the following do some of their greatest work: Goethe, Holmes, Kant, Lamarck, Tennyson, Tintoretto, Titian, Verdi? Explain the educational significance of this. What contribution has Thorndike made to adult learning?

3. Explain the following rules of learning: direct action, distribution of practice, general motivation, meaningful material, recency, repetition, self-motivation. Account for any seeming exceptions to these general rules.

4. Explain the following types of learning: sensori-motor, perceptual, associative, problem solving. Which is involved in animal learning?

5. Distinguish between introspective and objective methods in psychology; between deductive and inductive methods. When should each be used?

6. Distinguish among the following types of solutions to problems: adequate, correct, psychological.

7. Distinguish between mental test and achievement test; ordinary test and standardized test; test and scale.

8. T. F. Human nature varies markedly among different peoples.
T. F. The babe is born with a few innate ideas.
T. F. It is useless to cry over unavoidable matters.
T. F. Innate drives are called instincts.
T. F. Instincts are usually disembodied entities.
T. F. The exact number of instincts will sometime be known.
T. F. Inborn tendencies differ widely in complexity.
T. F. The more complex the tendency the easier it is to modify.
T. F. Instincts raise the threshold of stimulation.
T. F. The strong emotions stimulate glandular secretions.
T. F. Instincts are confused with instinct-habit consolidations.
T. F. Most fears are instinctive.
T. F. Civilized man is the product of man's modifiability.
T. F. Habit formation is independent of instincts.
T. F. All illusions are pathological.
T. F. A good vocabulary is essential to efficient thinking.
T. F. Thinking eliminates necessity for trial-and-error process.
T. F. The law of effect is important in speech development.
T. F. We all form identical concepts.
T. F. Thinking and guessing are fundamentally different.
T. F. An authority is as likely to be wrong as anyone.
T. F. Ideals are abstractions.
T. F. Intellectual measurements are relative rather than absolute.
T. F. Social and moral traits are easily measured.
T. F. Capacity to learn is acquired.
T. F. Both forgetting and remembering are integrant parts of the learning process.
T. F. Modern times are more conducive to mental health than primitive times.

SELECTED REFERENCES FOR ADDITIONAL STUDY

Benson, C. E., *et al. Psychology for Teachers.* 1933 edition.
This is a behavioristic presentation.

Chapman, J. C., and Counts, G. S. *Principles of Education.* 1924.
Part II gives a good discussion of the psychological foundations of education.

Fletcher, John M. *Psychology in Education.* 1934.
This stresses the so-called Progressive Education.

Gates, A. I., *Psychology for Students of Education.* 1930.
This is eclectic or selective in viewpoint.

Gray, J. S. *Psychological Foundations of Education,* American Book Company, 1935.
Advocates philosophical interpretation of psychological studies.

Griffith, C. R. *An Introduction to Educational Psychology.* 1931.
This is a behavioristic presentation.

Hollingsworth, H. L. *Educational Psychology.* 1933.
This is a psycho-analytical presentation.

James, William. *Principles of Psychology.* 1890.
James's classic discussion of habit is given in chapter IV.

Jordan, A. M. *Educational Psychology.* 1933 edition.
This is a very practical book on the eclectic basis.

Kuehner, Q. A. *A Philosophy of Education,* chaps. XI and XIV.
Gives selected quotations on will in education and on psychology and education.

Ogden, R. M. *Psychology and Education.* 1932 edition.
This is a Gestalt presentation.

Sandiford, Peter. *Educational Psychology.* 1929.
This is a behavioristic presentation.

Thorndike, E. L. *The Fundamentals of Learning.* 1932.
This is a good presentation of Thorndike's views.

Tolman, E. C. *Purposive Behavior in Animals and Men.* 1931.
This is a hormic presentation.

Tonks, Helen L. *Psychological Foundations of Teaching.* 1927.
In this book are discussed the psychological principles which the author considers useful to teachers in devising and evaluating methods of teaching.

Trow, W. C. *Educational Psychology.* 1931.
This is a hormic or purposive presentation.

Wheeler, R. H., and Perkins, F. T. *Principles of Mental Development.* Crowell, 1932.
Presents problems of learning from the Gestalt standpoint.

CHAPTER VIII

THE SOCIOLOGICAL BASIS OF EDUCATION

WE HAVE seen in the preceding chapters that the biological and psychological properties of man make his superior education *possible*. These same properties have also produced the social group, which in turn makes man's education *necessary*. The intermingling of individuals, the interplay of their influence, and the interlocking of their activities require an intricate and difficult type of social adaptation. A successful interrelation between the individual and his social environment necessitates the superior education of which the individual is innately capable. Because of this, the aim of education has often been stated in terms of social efficiency, or as an adequate adjustment to the social environment in which man is born. The social group determines the amount and the kind of education that the individual must have for meeting the demands of the age in which he lives. A consideration of the sociological basis of education, therefore, is of supreme importance.

Group life. Group life is a common phenomenon of nature. Plants tend to assemble together according to their natural relationships. Grasses collect in patches, shrubs in thickets, flowers in beds, and trees in forests. Animals tend to group themselves in accordance with the characteristics of their kind. Insects congregate in colonies, birds in flocks, cattle in herds, and fish in shoals. Food, protection, and reproduction are prime causes of the massing arrangement among both plants and animals. All plant groups and many animal groups are merely a collection of individuals, with but little interdependence. Among some animals, notably certain insects and higher vertebrates, group life is more than a mere massing of individuals. There is observable among such insects as ants and bees, and among such mammals as beavers and primates, a rather definite social bond. These animals have a companionship or mutual relationship and intercourse with others of their kind that may be described as social behavior. They live in more or less organized communities which are social. This group life, ranging all the way from a mere collection of individuals to social processes of varying degrees of complexity, is a frequent occurrence in nature.

Man, however, is pre-eminently the social animal. Gregariousness, the seeking of group life and the avoidance of being alone, is a universal ethnic characteristic of mankind. Man has always lived in social groups of various sizes and for many reasons. The first, smallest, and most fundamental social group was composed of the parents and children who comprised the family. Families of common descent combined and formed the next larger non-intermarrying group, which was the clan. Clans united into tribes; and so on with ever-widening social circles. Groups expanded into races, with a common descent; into nations, with a common territorial unity: into alliances for a mutual cause; and, perhaps, they will form themselves into a world society for the common good. Group life among mankind has become a very complicated social process. Some of the chief forces and influences which bind the social group together are blood ties, coercion, economic necessity, protection. like-mindedness and the common welfare.

In his social evolution, man has acquired as part of his human equipment an intense desire for companionship, sympathy, leadership, and the approval of others. These cravings can be satisfied only by social contacts within the group. It is man's sensitiveness and responsiveness to the stimulus of his social environment that makes him a human being.

Group life is as essential to the human being as the air he breathes. Man is born into the social group and, even if he desired, he could not get out of it. Since he is a society-loving individual, man does not want to get away from his kind. Social isolation or solitary confinement is a most severe form of human punishment.

Advantages of group life. Group life has a number of properties which render it useful and desirable. It is particularly favorable to *security*, and it provides a medium for *co-operative activity* and for *cumulative experience.* The chances of survival are greater in the group than by struggling along alone for an existence. The group is more powerful and effective than is a solitary individual. In the group, the individual has more protection from foes; more certainty of a food supply; more freedom from fear, risk, and uncertainty. The superior survival value of group life is apparent throughout the animal kingdom. The development of group life is intimately connected with the struggle for existence.

Among infrahuman animals the advantage of group life lies mostly in the added security provided by the mere strength of numbers. However, there is evidence that some lower animals act jointly in a social manner for a common end in their life adjustments. A simple form of collective action among lower animals is the "spacing out" of flying geese, migrating fish, and marching penguins. The posting of sentinels is a rather common co-operative activity among certain birds and animals. In a beaver colony, each individual does his share in tree felling and dam construction. In an ant colony, the queen, workers, fighters, and aphids work concurrently at their respective tasks to the benefit of all. The queen is protected, the aphids are "milked," the larvae are cared for, intruders are attacked, and leaders are followed to food sources. A similar division of labor with co-operative activity is observed in a hive of bees with its queen, drones, and workers. The anthropoid apes are reported to carry on co-operative activities of an interesting and varied character.

Man is perhaps the only co-operative animal in a true sense. His highly developed group life provides him with a vast diversification of activities which not only permit but even compel him to specialize upon a particular task according to his ability, his inclination, and the social need. He is encouraged on every hand to concentrate his efforts upon his particular task, and to pursue it until he attains expertness in it. The result is that the actual accomplishments of individuals working together in a co-operative manner are far beyond the most ambitious dreams of any individual working alone. Co-operative activity is one of the great benefits derived from group life.

The most far-reaching advantage of group life, however, and one denied the lower animals, is that of cumulative experience. It may be that some fears among lower animals, and some song characteristics of birds, are handed down from one generation to another as a sort of "tradition." But even the highest forms of animal life next to man lack the means for accumulating a social heritage and creating a civilization. Among lower animals, each individual must depend upon his own experiences, profiting but little from the experiences of others; each generation also must begin where the previous one began, and repeat its simple and primitive life, adding nothing for posterity. The pooling of experiences for the benefit of all, and the passing on of discovered skills and knowledge from ancestors to posterity, are characteristics of mankind alone. Each succeeding generation of mankind profits by the total racial experiences accumulated up to that time, and adds another increment for the benefit of those still to come. The cumulative experience and the co-operative endeavor which the social group has made possible are the causes of man's control over the forces of nature and of human progress in general.

Communication and the social group. Communication among individuals is fundamental to the formation and functioning of the *social* group. Group life among lower animals is circumscribed by the limited means they have for expressing themselves to one another. Ants, by means of particular odors, seem to recognize their nest-mates, the trail of leaders, and the appearance of intruders. This, with perhaps a few significant strokes of the feelers, is the extent of their social contacts. Intercommunication among the highest forms of animal life next to man, the anthropoid apes, is confined to grimaces, gestures, and perhaps a dozen inarticulate sounds for making known their immediate feelings and wants. The lack of speech is definitely a delimiting factor in the co-operative activities and the cumulative experiences of animal group life.

Man made a most remarkable contribution to the social group when he developed the art of talking. The primitive human group, limited to gestures, pantomime, inarticulate sounds, and crude illustrations as the only means of sharing experiences, were capable of but little progress. The achievement of an articulate language facilitated social contacts, widened group influence, and made possible the oral transmission of accumulated information, opinions, practices, and customs from ancestors to posterity. Another most significant event in group life was the invention of a written language. This made it possible to expand social influences by means of an indirect contact, and to preserve the acquisitions of the past in a permanent and accurate form. Indirect group influences have become indefinitely extended through the invention of the printing press, telephone, telegraph, radio, and talkies. Direct group contacts have also become vastly enlarged by the use of steamships, railroads, motor-cars, and airplanes.

The ease of communication today tends to make the whole world a single social unit.

Communication is so basic to social groups that sociologists have used the nature of the language bonds as the criterion for classifying groups into primary, intermediate, and secondary types. The primary types include those original groups whose social bonds consist of direct face-to-face communication. The family, the play group, and the community are examples of these. The intermediate type is composed of those organizations which are influenced by both direct and indirect communication, such as labor councils, women's clubs, schools, and churches. The secondary type comprises those associations whose influence is based solely upon written language or other indirect contacts, such as the reading public, radio audience, movie crowd, and the State. Incidentally this classification tends to follow the chronological order of these group types in civilization, and it is closely related to the successive social needs for extending education.

Classification of accumulated experience. As experience accumulated down through the ages, there were amassed numerous public beliefs, customary actions, and vague conceptions; and there accrued also much positive knowledge in the way of actual occurrences, discoveries, and inventions. Through a crystallization process the whole body of usages, practices, and conventions which regulated the manner of living and doing assumed a rather fixed and definite form. Each generation guarded all this social heritage with great care, added something to it, and passed it on to its heirs.

With the increased accumulation of knowledge it became necessary for the series of evolved facts to be arranged systematically into arbitrary categories and groups. These were divided and subdivided into more and more specialized groups, labeled, and catalogued in some convenient and intelligible manner. A common modern classification of the sum of

- Accumulated Experience
  - Physical Sciences (Inorganic)
    - Astronomy
    - Chemistry
    - Geology
    - Mathematics
    - Physics
    - Allied subjects
  - Biological Sciences (Organic)
    - Anatomy
    - Botany
    - Physiology
    - Psychology
    - Zoology
    - Allied subjects
  - Social Sciences (Social)
    - Economics
    - Geography
    - History
    - Political Science
    - Sociology
    - Allied subjects
  - The Humanities (Culture)
    - Art
    - Language
    - Literature
    - Philosophy
    - Religion
    - Allied subjects

accumulated knowledge conserved by civilization is shown above. Each subject can be further divided into more specialized forms. For example, art includes such subdivisions as architecture, music, painting, and sculpturing. Physics was originally the whole science of the physical world, including such subjects as astronomy, biology, chemistry, and geology; but it is now restricted to inanimate matter involving no chemical changes, and has several subdivisions of its own. Much overlapping of this classified knowledge naturally exists among the artificial and arbitrary groupings, and some disagreement frequently appears as to the most appropriate compartment for certain related ideas to be pigeonholed in. For example, some of that which is known about the genesis, powers, and functions of the "mind," and now classified as psychology, belongs to the sociological sciences, as well as to the biological sciences. These categories of human endeavor are but different phases of the unity or oneness of the world which in its wholeness human beings are unable to comprehend. The classification indicates the form in which accumulated experience is conserved for convenient reference.

Social institutions. Just as accumulated knowledge was systematically arranged into classes, so too social activities have been co-ordinated into institutions. As society progressed from the loosely organized nomadic group to a relatively more civilized condition, social life became differentiated and organized for the purpose of carrying out some phase of the social function. Not only did the establishment of and the regard for social institutions facilitate co-operative endeavor, but the embodiment of social functions in organized institutions also set up rather definite educational goals and provided a great educative influence upon the individual.

The present stage of social development is characterized by a vast number of institutions or organizations of various kinds, purposes, and sizes. Some of these are very ancient and extremely important. The earliest social institution to be developed, the one devoted to bringing individuals into the world, protecting and nourishing them during their childhood, giving them a language, and providing the first social environment and opportunity for co-operative relationships, was the *family.* Those phases of social life which have to do with the production, distribution, and consumption of the material means of satisfying human desires for food, shelter, clothing, and luxuries were embodied in the *economic organization.* The particular opinions and practices having to do with religious faith and worship were formally organized under certain leaders, authorities, and creeds as the *Church.* The functions of controlling, regulating, and administering the laws of a people occupying a definite territory were assembled under a system of government known as a *political State.* For the function of teaching children to live in the remarkable man-altered environment, society created the *school* as an institution devoted exclusively to imparting the necessary education. These are the five most important social institutions coming down through the ages: the family, the economic organization, the Church, the political State, and the school. While they have maintained their separate existences as distinct institutions, there has been among them much overlapping, shifting, changing, and complicating of their respective original functions and responsibilities.

The social inheritance. The accumulated achievements of the race are bequeathed to succeeding generations as a social heritage. The social surroundings in which each generation is born consists of all the accomplishments and discoveries of predecessors, the material improvements and mechanical inventions, the institutionalized social activities and economic surpluses, the ethical ideals and standards, the traditions and superstitions, the customs and prejudices, and the many intricate and puzzling social problems. The untaught child starts his career where primitive man began, but, with the aid of adults, he mounts the shoulders of past generations, claims their contributions, and gradually achieves his rightful place in the social procession of his day. As time goes on, the separation between primitive and civilized environments becomes greater and greater. The spanning of this ever-widening cultural gulf requires constantly longer and more careful preparation in the form of education. The social heritage is the prime factor in reclaiming the child from savagery and barbarism and making of him a cultured modern man.

Some of the heirs guard well their social heritage and attempt to maintain with great concern and labor the traditions and achievements bequeathed to society from the past. This faction is not only disposed to conserve unimpaired existing institutions and views, but it is also rather firmly opposed to sudden changes and innovations. This group makes up the major *conservative* element of society. Others of the heirs realize that they have inherited along with the many benefactions an accumulation of obsolete, erroneous, and even vicious ideas and traditions. This faction struggles with outworn social sanctions and taboos which bar social progress, tries to discover or invent better ways of doing things, and does not hesitate to alter the revered old by substituting something new. This group makes up the minor, but increasing creative element of society. From these two normal and typical positions, other attitudes radiate in varying degrees toward the uncompromising ultra-conservative or reactionary on the one hand, and the extreme radical or destructionist on the other. Neither the conservative nor the creative element is desirable alone, but both working together in a complementary manner provide a safe and sane progress without destroying the social continuity. Diverse attitudes toward the social inheritance and existing social order are stimulated by individual differences, personal interests, and particular social environments.

Individual and social group relationship. The relative importance of the *individual* and the *social group* has been a recurrent topic of long standing. Each of these factors has, at various times and among different peoples, received exaggerated emphasis as the chief concern in human welfare. Some have bestowed upon the individual their primary regard, and have insisted upon his right and freedom to direct his own affairs without interference. Individualism was the dominant and controlling idea among many of the early Greeks, leaving the welfare of the State as of little or no concern. With some of them "man was the measure of all things." Rousseau, too, stressed the supremacy of the individual and his rights. The Declaration of Independence and American democracy incorporated much of the individualistic theory of Rousseau. Modern interest and developments in the field of psychology have also given much emphasis to the importance of the particular individual and the opportunities for his full and unhampered unfolding. The individualistic attitude in modern times has been especially forceful and persistent. Others have just as strongly stressed the supremacy of the State, and have been disposed to sacrifice, if necessary, the individual for social efficiency.

To treat either the individual or the social group as a separate and distinct entity is unsound. They are neither mutually exclusive nor antagonistic. They are in reality two ever-present, interdependent, and complementary phases of the same identity. One cannot exist without the other; and to overemphasize one to the neglect of the other is unnatural and, in the long run, disastrous. Plato, one of the greatest social thinkers of all time, seemed in spite of the individualism of his time to realize the necessity for a harmonious balance between these two factors — the individual and the social group. Extreme individualism leads to the habit of regarding one's self as the center of every interest, and results in an egoism which tends toward anarchy and destruction. To avoid this catastrophe, self-interest needs to be tempered with an altruism which has a sincere regard for and an earnest devotion to the welfare of others.

The social group provides the medium in which the individual is produced, nourished, and developed into a normal *human* personality. It gives him ready-made institutions and standards of conduct. By the hope of reward and approval it stimulates him to competitive and co-operative activity. Without the contributions of the social group individual development would be impossible. A human being apart from the social group is inconceivable. The individual, on the other hand, supplies the fundamental unit of which society is composed. It is through the education of the individual that social progress and achievements are propagated. The welfare of the social group depends upon the character of its individual members, and the well-being of the individual depends upon the condition of the social group. This dualism pervades human life. A consciousness of self involves the consciousness of others. Great men are products of great social movements. Great achievements are evolved through the co-operative efforts of the many. Great inventions are built upon the developments of others. Great discoveries are collective enterprises. The individual and the social group are complementary aspects of the same thing.

Increasing significance of the social group. Individual and social-group relationships have been greatly altered by the substitution of industrial for agrarian activities. Not long ago the population was largely rural and provincial. There were great frontiers beyond regions of settlement and civilization where free lands, personal freedom, and individual opportunities abounded. Communication and transportation among isolated individuals and separated groups were slow and difficult. Abundant natural resources were still waiting to be claimed and used. Relatively independent success was then attainable, and emphasis upon individual achievement was not entirely unreasonable. Within recent years the population has become largely urbanized. Unappropriated regions providing opportunities for migration and individual endeavor have been exhausted. Natural resources have become monopolized. Swift and easy communication and transportation have practically annihilated distances between settlements and the isolation among individuals. The whole social fabric has been radically and suddenly transformed within the short space of a few decades.

Activities which formerly were independent have become associational, and opportunities for success which were once individual have become co-operative. The independent retail merchant is being replaced by chain stores; the small farmer seems on the verge of being supplanted by corporation agriculture; and small business concerns of all kinds are giving way to great mergers. This has become an era of wide differentiation of activities, intense specialization of functions, and thorough organization of performance. Mass production by scientific methods, aided by mechanical devices and gigantic machines harnessed to the forces of nature, has unceremoniously snatched hand-tools, employment, and a living from many industrious workers. By the same means vast aggregations of wealth have been inequitably concentrated in the hands of a few, while at the same time large numbers of the population in spite of the machine-produced economic surpluses are cut off from an adequate supply of food, shelter, and clothing, or any means of acquiring the necessities of life. The inability of the individualism of the past to harmonize with the social order of today presents many maladjustments and creates many intricate economic, moral, and political problems, for which no adequate solution has as yet been offered. In the present *milieu*, extreme individualism is an anachronism. The increasing significance of group activities is an occasion for stressing the harmonious relationship which must exist between the individual and the social group, if civilization is to survive and the members of society are to prosper.

Education and the social group. The nature and needs of the social group determine the character of education with which the individual should be provided. When life was relatively simple and straightforward, a little systematic instruction of a rudimentary nature served all the useful purposes for the majority of the members of society. So long as the social group advanced by slow and gradual steps, the elementary type of education, except for an occasional addition, remained very much the same from generation to generation. Under these rather static conditions, common education could well be limited to a transmission of the spiritual heritage and some little knowledge of the three R's, and at the same time meet the usual social demands of the time. Through the ages formal education became naturally and closely tied up with past traditions, assumed extreme conservatism, and acquired much resistance to innovations and change. In meeting the more recent and rapid changes of modern group life, education has therefore been greatly hindered in the performance of its true function by the weight of obsolete and useless accumulations, a satisfaction with the old and established order of things, and a habit of complaisant deference to the past.

The only hope of survival and prosperity in the newly created, intricate, and ultra-artificial environment of modern civilization, lies in education. H. G. Wells properly described the situation when he said, "Civilization is a race between education and catastrophe." For education to win, as we believe it eventually will, it must be keenly sensitive and responsive to existing social realities, demands, and future needs. Society has unbounded confidence in the ultimate dependability of human nature; in the educability of the individual for the most complex relationships; and in the possible acquirement, through individual instruction and social training, of the essential qualities for the furtherance of happiness, efficiency, and social service. If this educational faith is to become an actuality and an utter collapse of civilization is to be avoided, then popular education must become as scientific as the scientific world for which it is the preparation. An education which faces facts, realizes responsibilities, and reacts to realities must be intelligently guided by a sound directive social purpose. The controlling objectives must be derived from the various fields of human activity. In the social group is to be found not only the impelling motive for education but also the requisite materials of instruction. The ultimate goal of education may remain constant when once correctly defined, but the more immediate means and functions in its attainment must change and keep pace with social progress and changing demands.

TOPICS FOR DISCUSSION

1. To what extent is the young child anti-social? In what general order do social traits develop from early childhood to maturity?
2. Discuss the relative advantages and disadvantages of imposing the folkways of one generation upon the next.
3. "The pooling of experiences for the benefit of all, and the passing on of discovered skills and knowledge from ancestors to posterity, are solely characteristics of mankind." What human characteristics make these distinctive achievements possible?
4. Language has been called man's greatest invention in the light of its effect upon his social life. Name two other great inventions, and show how they have profoundly influenced social relationships.
5. Under what circumstances of human development does a new social institution become necessary? Illustrate.
6. What useful purposes, if any, do "radicals" serve in human society?
7. List some of the disturbing and unsolved problems growing out of the increasing complexity of modern society. To what extent were these developments unavoidable?
8. In the light of pressing problems and needs, indicate points in which our present educational program may be inadequate.
9. Should the school lead or follow the development of society?

SUGGESTED EXERCISES FOR STUDY AND DISCUSSION

1. Select the best response:

——— ——— ——— Three chief advantages of group life in order of importance are (1) approval of others (2) communication (3) companionship (4) co-operative activity (5) cumulative experience (6) imitation (7) leadership (8) security (9) suggestion (10) sympathy

——— An educational philosophy should stress (1) interdependence of individual and society (2) contributions of society to individual (3) contributions of individual to society

——— Social improvement is made primarily through (1) censorship (2) education (3) freedom of speech (4) leadership (5) propaganda (6) public opinion (7) research in social affairs (8) revolution (9) the press

—— A person with a friendly attitude toward social reform should be called (1) an alien (2) an anarchist (3) an aristocrat (4) a bureaucrat (5) a communist (6) a conservative (7) a capitalist (8) a democrat (9) a fascist (10) a member of the intelligentsia (11) a liberal (12) a Nazi (13) a radical (14) a revolutionist (15) a socialist (16) a technocrat

—— Zoology is historically a branch of (1) astronomy (2) chemistry (3) geometry (4) history (5) physics

2. Indicate whether each statement is true or false (verify):

T. F. A sociological viewpoint is desirable but not essential in a philosophy of education.
T. F. Social behavior is an innate characteristic.
T. F. The influence of social stimulus is generally overestimated.
T. F. No distinction can be made between material and spiritual heritage.
T. F. Education reproduces the race's achievements in the individual.
T. F. All "eternal values" disappear in rapid social changes.
T. F. The individual is the passive element in society.
T. F. Charity opposes the *status quo.*
T. F. Benevolence is a type of selfishness.
T. F. State coercion prevents freedom.
T. F. Wisdom involves a regard for consequences.
T. F. The child cannot escape social inheritance.
T. F. Teaching evolution is lawful in all states.
T. F. Personality is the result of socialization.
T. F. The more we learn about biology, chemistry, and physics the more differentiated we find them.
T. F. It is anti-social to avoid military duty in time of war.
T. F. Controversial issues should be avoided in education.
T. F. Individuality is a product of society.
T. F. The higher the civilization the smaller is human interdependence.
T. F. Progress is increased success in living.
T. F. Institutions are the product of social evolution.
T. F. A machine-slave civilization eliminates all the hazards of a human-slave civilization.
T. F. Some individuals have freed themselves from customs.
T. F. Social and educational aims should be the same.

SELECTED REFERENCES FOR ADDITIONAL STUDY

Allport, F. H. *Social Psychology.*

Has excellent material on social behavior, with comprehensive lists of references, on pages 147–433.

Betts, G. H. *Social Principles of Education.*

While this is an old book, it provides a well-worked-out and sound background for understanding later developments.

Demiashkevich, M. *An Introduction to the Philosophy of Education.*

Chapter VII is devoted to a discussion of education for social progress in a changing social order.

Doughton, I. *Modern Public Education — Its Philosophy and Background.*

Chapters X and XI present a discussion of the social purpose of formal education and the school as a social instrument.

Finney, R. L. *A Sociological Philosophy of Education.*

The sociological viewpoint is well explained on pages 1–189.

Good, Alvin. *Sociology and Education.*

This is a good presentation of social life from the educational viewpoint. It has comprehensive references.

Horne, H. H. *The Philosophy of Education.* 1927 edition.

The sociological aspect of education is discussed on pages 97–168. Much good reference material is given.

Kilpatrick, W. H. *Source Book in Philosophy of Education.* 1934 edition.

Quotations bearing upon social and individual life are given on pages 143–61, democracy and the problem of progress on pages 222–94, and social planning on pages 319–50.

Kinneman, J. H. *Society and Education.*

Much material of practical value is to be found on pages 3–414. It includes many stimulating book and magazine references, and a good general bibliography.

Kuehner, Q. A. *A Philosophy of Education.*

Chapters VIII, X, XII, and XIII give selected quotations pertaining to the individual and society, social heredity, social progress, and the meaning of experience.

Kulp, D. H. *Educational Sociology.*

This stresses the sociological methodologies most pertinent to and potent for the development of a science of education. It includes general reading lists.

National Education Association, Department of Superintendence. *Thirteenth Yearbook,* 1935.

This is devoted to social change and education, reviews the nature of recent social trends, summarizes the efforts of society to adjust to change, and points out the implications for education of social and economic adjustments.

Payne, E. G. *Readings in Educational Sociology.*

This is a collection of well-selected material from various sources. Use table of contents for finding the reading of special interest.

President's Research Committee, *Recent Social Trends.*

A national survey of social trends in United States made by authorities in various social areas. A mine of valuable material.

Smith, W. R. *Principles of Educational Sociology.*

This gives a clear presentation of the sociological foundations of education on pages 3–428. Good references are included.

Thomas, W. I. *Source Book for Social Origins.*

Ethnological materials and annotated bibliographies for the interpretation of savage society.

Tuttle, H. S. *Social Basis of Education.*

Society as an educative agency and the school as a social agency are discussed on pages 199–557. Many book and magazine references.

CHAPTER IX

THE SOCIOLOGICAL BASIS OF EDUCATION
(*continued*)

Social activities and educational objectives. Educational objectives tend to parallel the social activities and concepts of the age and the place in which they prevail. An oriental education aimed at the perpetuation of the past could not meet the social demands of a more forward-looking occidental people. An aristocratic education suited to maintain marked social classes and distinctions could serve no good purpose in a democratic society. The educational functions satisfactory in simple colonial life would not suffice in a complex industrial age. Education is the only means at society's disposal for shaping and attaining group ideals and aspirations. Society's practical difficulties in the pursuit and realization of these goals are education's opportunities for checking its own effectiveness and for taking its immediate bearings. Sociological considerations are of prime importance in the formulation of educational objectives.

The general social purposes toward which modern education should be directed were formulated in 1860 by Herbert Spencer, the English scientist and philosopher. He classified the chief human activities into those which directly minister to self-preservation; those which indirectly minister to self-preservation through the securing of the necessaries of life; those which have for their end the rearing and discipline of offspring; those which are involved in the maintenance of proper social and political relations; and those miscellaneous activities which make up the leisure part of life and are devoted to the gratification of tastes and feelings. Spencer derived from these human activities the functions of education which were to prepare for "complete living." These were: (1) direct self-preservation, (2) indirect self-preservation, (3) parenthood, (4) citizenship, and (5) the miscellaneous refinements of life. Nearly sixty years later (1918), when a commission of the National Education Association was searching for the principal aims of education in a democracy, it could do no better than set forth in a modified form Spencer's objectives. As a result, the *cardinal principles* of American education became (1) health, (2) command of fundamental processes, (3) worthy home membership, (4) vocation, (5) citizenship, (6) worthy use of leisure, and (7) ethical character.

Health. Physical and mental fitness are essential both to individual wellbeing and happiness and to positive achievement and social usefulness. John Locke, the great English philosopher of the seventeenth century, held that "the attainment of a sound mind in a sound body is the end of education." Unusual accomplishments of the genius are often due to a great physical endurance as well as to great mental ability. Longfellow may have sensed this when he wrote:

> The heights by great men reached and kept
> Were not attained by sudden flight,
> But they while their companions slept
> Were toiling upward in the night.

Herbert Spencer maintained that "to be a good animal is the first requisite to success in life, and to be a nation of good animals is the first condition to national prosperity." It is only by a vigorous people that a high civilization can be maintained. When the Athenian civilization was at its height, a fully rounded physical and mental development was the educational ideal. Health and the conservation of life are so fundamental to social efficiency today that they are society's foremost concern. The close connection between the physical and mental processes was noted in the previous chapters on the biological and psychological foundations of education.

An important phase of health education is to provide the members of society with accurate scientific information and to assist them in the formation of correct health habits and attitudes. Mankind has so feared disease and impending death, and has so longed for health and physical fitness, that it has been susceptible to many fake doctrines and an easy prey for quacks and charlatans. Out of anxiety, ignorance, and gross credulity along health lines have issued many strange superstitions; quests for mythical fountains for renewing youth; searches for *elixir vitae* capable of prolonging life indefinitely; propitiatory sacrifices and amends to offended spirits; death-denying philosophies; visions of diseaseless and deathless utopias; health cults, fads, and "isms" of every description; patent drugs and unsavory concoctions.

Man's gullibility for such silly and stupid stuff must be replaced with an intelligent attitude toward true physicians and health specialists and a fund of scientific health information. The science of medicine and sanitation has banished from the earth dreaded scourges and plagues which formerly carried off whole populations; has brought other diseases under control; has made possible the elimination of all parasitic diseases; has relieved pain and suffering; has developed almost unbelievable performances in surgery; and has increased the average length of human life from twenty-one to almost sixty years during the past four centuries and more than doubled it since the American Revolution. Hippocrates, the great Greek physician and the Father of Medicine, four centuries before Christ, aptly said: "Wherever there is love of mankind, there is love of the medical art."

Modern society is noted for its progress in providing a more healthful and sanitary environment. It is hard to realize the squalid surroundings in which civilized peoples lived not so long ago. They had no bathing conveniences, and seldom bathed at all. Pepys, the famous English diarist, considered the washing of his feet so extraordinary an event that he marked it down in his diary as having occurred on May 30, 1663. In 1780, it is reported, a theological student of Leipzig University was barred from passing his doctor's examinations because of his modernism, which consisted in washing his whole body. During the eighteen-forties, when bathtubs first came into use in America, some doctors predicted rheumatism and inflammation of the lungs for those who bathed in winter.

While the modern world has done much since those days in the way of cleanliness, provision for pure drinking water, and sanitation in general, it has also created many other health problems of its own. Wider social contacts have increased the scope for spreading contagious diseases. Industrial accidents produce untold suffering and great economic losses. Automobile accidents are responsible for many deaths and maimed persons. The abundance of reading material, commuting, and artificial light have seriously overtaxed the eyes. The speed and complexities of modern living, routine toil, and sedentary life have brought about many nervous disorders. Quick lunches and concentrated foods have disturbed the digestive system. Artificial heat and poor ventilation have interfered with the respiratory system.

The problem of preventive and curative health measures has become so much a social concern that it is rapidly passing from a private matter to a public function. The urgent need for this shift is emphasized by the fact that health practices and habits are estimated to be from ten to twenty-five years behind health knowledge. Under present conditions the health and physical fitness of a particular individual directly or indirectly concerns other members of the social group. Therefore individual ignorance, poverty, or indifference cannot be allowed to prevent anyone from receiving the best health attention society has to offer. The creation of a desire and willingness to accept this is an important part of health education.

Command of fundamental processes. The fundamental processes, in the order of their social importance, are oral language, silent reading, written language, and arithmetic. Society is today more dependent upon a universal command of these tools of knowledge than ever before. Without a literate population the modern world, with its intricate industrial development, its complex political and social organization, its extensive intercommunication system, and its great urban centers, could not exist. Dr. Allport well says:[1]

> Making and responding to language stimuli, oral and written, has become deeply rooted in our most vital interests. We can scarcely conceive what human culture, or even human nature itself, would be without this function. The institutions upon which the social order rests are really systems of traditional and recorded language. *Education is the socialization and training of the individual through language symbols.* The edicts of government and public opinion, in rumor or print, direct his thought and conduct through the same medium.

The relative advancement of the group in social culture determines the proficiency demanded of its members in the language arts. Mutual understanding and confidence among members of the social group are contingent upon good *oral language* usage in everyday conversation. The individual's ability to express himself orally in clear, effective, and correct language gives him a decided advantage in his social contacts. Habitual language errors render achievement and successful mingling in the modern social group rather difficult. The more proficient the individual becomes in language habits, the better he will be able to express himself to others, comprehend others, and think clearly. Acquirement and refinement of oral language habits is a definite obligation of modern society to all of its members.

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[1] Allport, Floyd H. *Social Psychology*, p. 197.

Much less used in social intercourse by the average individual is *written language*, which includes composition, spelling, and penmanship. While this need is relatively less it is nevertheless urgent. Group activities require friendly, social, and business correspondence; filling out of business forms; and making permanent records and occasional notations. *Reading* enters into almost everything the individual does as a member of society. The ordinary affairs of modern life require the reading of safety signs, warnings, and directions; telephone directories, telegrams, and letters; advertisements, and price quotations. The important events of the day and the innumerable shifts and changes in human affairs which affect everyone can scarcely be known except through the printed page. It is through the medium of magazines, newspapers, pamphlets, bulletins, and books that modern man continues much of his education. These are also the chief sources of recreation for many. In business, in the professions, in civic life, and in the cultural and recreational pursuits, reading is the universal reliance.

While *arithmetic* is relatively the least important of the fundamental processes, its usefulness has gradually increased with the advance of civilization until it is indispensable to any functioning member of society. The number concepts of primitive man were very simple. The counting of the people to determine the numerical strength of the group for purposes of tribal warfare was a long step in the number arts. Another long step was taken when the formation of governments made computation necessary for the collection of taxes. Division of labor and trading, with its subsequent systems of exchange, made measurements and computation more and more intricate and important. Now universal skill in practical arithmetical computations is required for bank dealings, budgets, buying and selling, determining interest, insurance, investments, meter-reading, taxes, and the like. Modern life would be impossible without the number arts. They belong among the greatest gifts which civilization has bestowed upon mankind. It would be impossible to follow intelligently one's daily routine or to carry on an intelligent conversation without a number concept.

Worthy home membership. The family group consisting of parents and children forms the first unit in civilized society, both in point of time and in fundamental importance. The earliest functions of this most ancient and revered social institution were to beget children; to satisfy the sex impulse and parental affection; to supply food, shelter, and protection to the infant; to transmit the accumulated social heritage to the offspring; to prepare the child for adult pursuits; and to benefit by the division of labor and responsibilities between the sexes and by co-operative family activities in general. In the exercise of these functions the form of family organization, the source and nature of family authority and rule, marriage regulations, and connubial contracts have all varied greatly according to the social conditions of different times and places. Recently the industrial revolution, the urbanization of the population, the increased facilities for traveling, the advance of science with its questioning attitude, and the feminist movement have been prominent forces in destroying the old-fashioned patriarchal family and in making necessary a new type of domestic institution.

By the relatively sudden destruction of the structure and responsibilities of the traditional family, the modern family has been thrown into a disorganized, unstable, and uncertain status. The great predominance of activities now carried on outside the home has resulted in a great loss of companionship among those who dwell under the same roof, and of the comradeship and other common benefits derived from diversified and co-operative household duties. Today fathers and many mothers work away from home, and frequently in transient occupations. Children spend much of their time away from parents. Women have economic independence and new social interests. Many families live in apartment-houses and in rented homes, and have close neighbors whom they do not know. There are many contacts with others than the immediate family. These disruptive forces in modern life have led to a loss of family interest and affection, to an unwillingness to bear the economic burden of the home, and to dissatisfaction and unhappy home conditions, desertions, and divorce.

While the family organization has changed and some of its original activities have been transferred to other institutions, it continues to be the basic social institution with important specialized functions to perform. It is still the only established agency for bringing children into the world, for giving them nutritive and educative care during their early childhood, and for the legitimate satisfaction of the sex impulse. It also provides a place of rest and refuge from the strenuous activities of industrialized life. Worthy home membership in modern society should include training for these essentially family functions. Education for *mating* is necessary if biological inheritance is to be guarded and the child's right to be well born is preserved. This includes information in regard to the laws of heredity, means of birth control, methods of checking the propagation of defectives, significance of love and eugenics, and the importance of being discriminating in the formation of friendships with the opposite sex. Education for *parenthood* is essential if the child's right to correct nutritive and educative care is to be guarded. This requires knowledge relative to child growth and development, health habits, language habits, child interests, and the formative importance of the child's earliest impressions of life and human sentiments. Education for *married life* is indispensable if the child's right to a good home environment is to be protected, and if the family dwelling-place is to afford the needed rest and security from the outside world and be the abiding center of the affections. Home life should provide comfort, cheerfulness, comradeship, coziness, friendliness, and protection. This demands knowledge concerning the care and management of domestic affairs, home-making activities, causes of family disruptions, aspects of sex life, and the importance of the co-operative democratic ideal of home membership. The home is no longer self-sustaining and self-perpetuating. Definite training for worthy home membership is a social necessity.

Vocation. Man's principal life pursuit is the business, craft, profession, trade, or other occupation by which material wants are supplied. All other social activities and relationships are conditioned by vocational success. Every individual must have food to nourish, develop, and sustain the body; shelter to protect from exposure and annoyance; clothing for decency and comfort; and some luxuries to maintain the customary standard of living. While a small leisure class through fortuitous circumstances or inheritance has obtained economic independence, the great masses must depend upon regular and appropriate employment for their livelihood. Economic opportunity and security for the members of the social group are fundamental to civilization, and to the higher culture and better conditions for which society struggles.

The complicated industrial life of the modern world has changed vocational pursuits from individual to collective enterprises, completely transforming their character and fusing their success with that of the whole intricately evolved economic system. Economic life has always been concerned with the *production*, the *distribution*, and the *consumption* of the material means of satisfying human desires. In primitive society these factors had a simple, direct, natural, and immediate relationship, as the producers, distributors, and consumers were largely the same persons within a small group. In modern times they have become widely separated in both space and time, and greatly involved. The equation of supply and demand of commodities frequently fails to function. The acquisitive tendencies are stimulated. Altruistic sentiments and motives are often discarded for purely selfish pursuits of wealth and its enjoyment. Inequitable distribution of economic goods and wealth provides some with enormous fortunes, and leaves others in extreme need and poverty. Employment is not only highly specialized, mechanized, and dehumanized, but it is also spasmodic and uncertain. The whole social foundation and structure are placed under a severe strain by economic maladjustments. The principle is still to be learned by civilized society that in the long run the self-interest and prosperity of one individual or group of individuals depend at the same time upon offering maximum advantages to other individuals or groups of individuals, and upon the prosperity of society as a whole. The economic welfare of mankind depends upon a better and more harmonious adjustment of the factors entering into it.

If society is to thrive and flourish, education for economic life is imperative. This education must not be restricted merely to training for skillful production in some narrow vocational field, but must include the various aspects of the production, distribution, and consumption of economic goods and services. There must be continued study, scientific research, and effort toward increased efficiency in making agricultural produce and manufactured products available in abundance for human wants. In doing this, however, attention must be given also to such related problems as maintaining steady and adequate employment for the workers; providing attractive and healthful working conditions; preventing industrial accidents and sickness; humanizing the industrial process; harmonizing the capital, labor, and public relationships; creating service ideals, as well as profit-taking; maintaining the confidence of stockholders and bondholders; avoiding unscientific and wasteful exploitation of soil fertility, minerals, oil, forest, power, water, and other natural resources; and stimulating public good-will in general toward producing agencies and their activities.

The problem of transportation must also be attacked to the end that the physical process of conveying commodities from producers to consumers may be made more orderly and less wasteful. Since the natural relation between production and distribution no longer exists as in primitive times, serious attention needs to be given to the equitability and justice of the ultimate apportionment of the economic value of a created product or service among the capitalists, laborers, landowners, and others who co-operated in its production. This is essential if the members of society are to have the buying power to maintain their standard of comfort and to create a demand for the supply of created economic goods and services. While the individual will be a producer in but one vocation, he will be a consumer of the products of a vast number of occupations. Therefore his economic education should train him to be not only an efficient producer but also an intelligent and wise consumer. Unnecessary spending, *luxus* consumption, and needless destruction of economic goods are wasteful, economically unsound, and detrimental to social welfare. The margin between efficient production and temperate consumption should be saved and invested for future emergencies. As the chief consuming unit of society is the family, the training for sane and efficient consumption belongs largely to education for worthy home membership.

Citizenship. Good citizenship in its broadest interpretation embraces all the other cardinal objectives and is the ultimate aim of all education. It includes physical and mental fitness, a command of the fundamental processes, a worthy home life, satisfactory employment, a worthy use of leisure time, and acceptable traits of character. Education along these lines is training for citizenship. In a restricted sense, however, citizenship has to do more specifically with one's participation in the civil affairs of the government to which one owes allegiance and from which one is entitled to protection. Politically organized States have been evolved for the express purpose of exercising necessary restraints and direction over individual and group life, defining and preserving rights and privileges, prescribing and enforcing obligations and duties, providing and facilitating individual and group opportunities, and defending the people occupying a definite territory from those who would injure them or bring about their destruction. For these purposes, taxes are levied and collected, armies and police forces maintained, constitutions formed, laws made and enforced, offices established and filled, and an increasing number of other political provisions and enactments decreed. With the advance of civilization and the spread of mass education there has been a marked transition from the old autocratic "I am the State" to the modern democratic "of, for, and by the people" type of government. Training for civic affairs is especially necessary in a democratic form of government in which sovereignty is in the whole body of citizens and the government is conducted for the good of all.

Education for citizenship in a democracy includes the development of proper civic appreciations, attitudes, and habits, and the acquisition of useful civic knowledge. An appreciation of the political heritage and its value, and a strong feeling of loyalty for one's native or adopted land, are fundamental prerequisites to good citizenship. Patriotism, however, is not synonymous with good citizenship, and should always be accompanied with a sense of national interdependence or international welfare and a consciousness of world citizenship. Then, too, the individual should be a citizen of the period, as well as of the country, in which he is living. This means that he must have a progressive, open-minded, and scientific attitude toward civic affairs and political problems. He should be unwilling to be represented politically in his government by any other than broad-minded statesmen with far-seeing sagacity in state affairs. He should not countenance through indifference the activities of scheming and intriguing politicians who are primarily interested in the holding of political offices and their spoils.

Since democracy is after all more a manner of living than a political theory or machinery, the good citizen must form many basic civic habits. He must habitually go to the polls to vote, study political questions, participate in political gatherings and discussions, obey the laws, and perform numerous other civic duties. In order to do all these things intelligently and to serve his country well, he must acquire much exact civic knowledge, and be on his guard against half-truths, errors, and prejudices. Through ignorance the loyal and patriotic citizen with good intentions may serve his country in a harmful manner. The good citizen needs to be well informed politically. He needs to know something about the organization, regulation, and administration of the State in both its internal and external affairs; how public opinion is formed; what good and bad political practices and procedures are in use; something about the geography, history, and affairs of other people; what methods are used in stimulating the gregarious or group instinct; what are the dangers of political indifference; what are the most important and most immediate peace-time movements and achievements; and so on. Intelligent civic participation in a modern democracy requires of all the citizens specific training for political life.

Worthy use of leisure. So long as the masses of people depending upon hand tools and animal assistance had before them the opportunities of a virgin country, with vast undeveloped frontiers, they saw no possible end to the great variety of work to be done and had but little spare time, opportunity, or inclination for anything else. During those times play, even for children, to say nothing of adults, was considered by many to be a useless waste of valuable time, and in some instances even sinful; but with the advance of the industrial revolution and the ending of the pioneer days, much of the formerly incessant toil for the masses disappeared. Today power-driven machinery has so reduced the amount of hand work that there is relatively little need for human labor. This has resulted in an enormous limitation of employment, a gradual shortening of the working day, the observance of more holidays, an increase of Saturday half-holidays, a reduction of jobs for older men, an earlier compulsory age retirement from occupations, and progressively more leisure time for all. To the modernized household, too, have come labor-saving devices of various kinds; mechanical robots; compact living quarters; commercialized laundries and bakeries; and a ready store of housekeeping supplies available for prompt automobile delivery upon telephone order. By successive stages the housewife has been freed from many of her former household tasks. The spare time once so scarce and difficult to find is now actually thrust upon a bewildered and unprepared population. People crowd the highways, frequent the numerous roadside camps, pack the moving-picture houses, and patronize in large numbers the many commercialized places of amusement. With the inevitable increase of mechanical slaves to do the routine jobs for mankind and the making of routine jobs out of rather complicated processes, a still larger margin of unemployed time is bound to follow.

If the expansion of leisure time is not to hang heavily on the hands of the masses and eventually lead to the destruction of civilization, adequate education must be provided for its beneficial and worthy use. While several reasons may be advanced for the increasing prevalence of crime in the United States, it is perhaps no mere coincidence that our country with its disproportionate share of mechanical power and of leisure time has also the highest percentage of crime among civilized nations. The United States generates about three-fourths of the billion horse-power units of mechanical power at work in the world. This in terms of man-power units approximates the existence of thirty-five slaves for each person living within the boundaries of our country. It is, however, not only on the negative side of keeping the world a safe place in which to live and to own property, and as a relief from the fatiguing monotony of industrialized employment, that education for leisure time is required. The need is even more important on the positive side of utilizing the unprecedented opportunity afforded by extended leisure for greater and nobler achievement and for higher and better living and thinking.

Education for the worthy use of leisure must aim to provide individuals with abiding interests in a number of appropriate recreational activities. In the selection of the leisure-time interests suitable for cultivation, the relative worth or excellence of various activities should be evaluated by such acceptable standards as the probable *duration* of participation, the intrinsic qualities promising *permanence* of interest, and the possible *benefits* to be derived. As judged by these criteria there are certain of the arts, sciences, indoor diversions, and outdoor sports which possess superior merit for leisure-time uses. The lifelong pleasure and satisfaction which is to be derived from reading good literature, hearing beautiful music, seeing masterpieces of art, and carrying on interesting conversation are so outstanding that their universal cultivation as recreational activities is most desirable. Then, too, an appreciation of them will make more enjoyable the things worth seeing in travel. Nature study also possesses much value for leisure-time uses because of the additional understanding and joy it adds to camping, gardening, hiking, photography, and to the visiting of botanical and zoological gardens, parks, and museums. Card-playing and dancing are deserving accomplishments among the indoor diversions; and among the most suitable sports, swimming, golf, and tennis rank high. While any activity in order to be truly recreational can have no other immediate motive than the thorough enjoyment of the activity itself, one should learn to enjoy types of activities which do more than merely make the time pass agreeably. Recreational activities should provide, as a beneficial by-product, mental and physical relaxation and improvement, adequate refreshment from the wearying toil and anxiety of regular employment, a general feeling of well-being, and the satisfaction which comes from time well spent. A recreational program should be free from too much dependence upon expensive, and sometimes detrimental, commercialized entertainment. Adequate education for leisure time has become one of the most important problems of modern civilization.

Ethical character. Ethical character is by no means a new objective in education. It has been one of the major educational goals throughout the history of civilization. Aristotle, the famous Greek philosopher and ultimate authority for many centuries, held that the true aim of education is the attainment of happiness through uprightness of conduct. Herbart, the great German philosopher and influential educator for many years, maintained that morality is universally acknowledged as the highest aim of humanity, and consequently of education. Moral excellence and integrity of character have long been recognized as fundamental to happiness and to a successful social life. Of recent years character education has taken on a new significance and has become a most perplexing problem. Modern America, with its extremely mobile and conglomerate population, with its zealous belief in the principle of individual freedom and personal rights, and with its abundance of material wealth and of leisure time, has tended to ignore standards of right conduct and to stray away from moral duty and justice. As a result there has been among individuals of all classes an increasing preponderance of vice and crime. Grave offenses are committed against state and federal laws by individuals and by organized groups. It is this prevalent disrespect for law, order, authority, and moral standards that increases the importance of character education in modern society.

It is, of course, recognized that standards of right and wrong vary from age to age, and sometimes from place to place. What may be considered vicious and wicked at one time or place may be looked upon with approval as virtuous and just at another. Many of these inconstant practices may, however, be unimportant and controversial. While it is a fundamental principle that the social group sets the standard of right conduct, it is only over a long period of time that the permanent moral virtues are evolved. There are certain time-tested and basic moral traits and social ideals coming down through the ages which have a permanent value and which are unalterable by changing conditions. It is these that society cannot afford to ignore as their violation brings disastrous consequences. Plato, Aristotle's teacher, listed four of these in his "cardinal virtues": prudence, courage, temperance, and justice. The prudent man is considerate and discreet, and carries on his practical relationships with circumspection and forethought. The courageous man is firm and resolute in his moral convictions and obligations. The temperate man practices self-control, and is habitually moderate in the indulgence of his appetites and passions. The just man is fair and upright in his dealings, and renders everyone his due. Such a man would of necessity be honest, truthful, dependable, law-abiding, and deserving of the confidence of others. Character education involves the development of the habits of right conduct; the formation of moral attitudes, convictions, and feeling toward the worth of proper behavior; and the acquisition of ethical knowledge regarding what is right and proper, and its application in new surroundings. The soundness of all education lies in its ability to develop desirable character traits in individuals.

TOPICS FOR DISCUSSION

1. Recent publications have stressed the amazing gullibility of the American public in regard to quack medicines and widely advertised but worthless remedies. How far should health education go in combating this tendency?
2. In what ways has the industrial revolution forced a revision of vocational training?
3. What objections are there to having the training for vocations given by the employing organization?
4. The criticism is often made that college students, except for an extremely small "radical" minority, are indifferent toward civic and political affairs. What influences, educational or social, are responsible for this?
5. Why do leisure-time pursuits exert such a dominant influence upon character and personality?
6. In schools where religious instruction is not permitted, what sanctions can be used as the basis for the teaching of moral conduct?
7. What policy should be followed by the teacher in dealing with controversial issues of a social or economic character?
8. What habits and attitudes should the school try to develop in its pupils as a general preparation for vocational service?
9. What are the advantages and disadvantages to childhood of the prevalent tendency toward small families?

SUGGESTED EXERCISES FOR STUDY AND DISCUSSION

1. Select the best response:
   - —— Morals are best taught by (1) command (2) precept (3) punishment (4) stimulation (5) threat
   - —— The first concern of education should be (1) civic life (2) economic life (3) family life (4) health (5) recreational life (6) religious life

—— The most basic fact in our economic disruption is (1) foreign trade saturation (2) inanimate energy development (3) disproportionate man-hour and money costs (4) technological unemployment (5) specialization (6) decreasing population (7) production efficiency (8) end of frontier (9) growth of inventions

—— The chief factor in making health instruction a school responsibility has been (1) urge of medical profession (2) increase of health knowledge (3) decline of home training (4) new conception of education (5) new attitude toward disease

—— The most stressed phase of economic education has been (1) conservation of natural resources (2) equitable distribution (3) humanization of industry (4) increased production (5) service (6) wise consumption

—— The most stressed phase of civic education has been (1) appreciation of social heritage (2) civic habits (3) civic information (4) progressive and scientific attitude (5) broad social consciousness

—— Religion would be impossible without (1) formalism (2) intolerance (3) morality (4) mystery (5) sectarianism (6) superstition

—— For an activity to have recreational value it should not be (1) commercialized (2) compulsory (3) difficult to acquire (4) suitable for adults (5) variable in interest appeal (6) work for anyone

2. Indicate whether statement is true or false (verify):

T. F. Our civilization is making mental hygiene instruction necessary.
T. F. Projection is a form of rationalization.
T. F. The outlook for objective measurements of character is good.
T. F. Failure in an unimportant endeavor is of no consequence.
T. F. Honesty should be taught as an expediency.
T. F. Ethics have a physiological basis.
T. F. Conscience is a product rather than a cause of behavior.
T. F. Slavery limits the development of personality.
T. F. Charity is a defense of the *status quo*.
T. F. Fascism makes society the end and the individual the means.
T. F. The social utility of poverty is greater now than ever.
T. F. The lag between health knowledge and practice can be completely closed.
T. F. Compulsory education complicates school health work.
T. F. Science and religion by their very nature are incompatible.

T. F. Man seems always to have craved an interpretation of nature.
T. F. Family life has been greatly influenced by industrialization.
T. F. Spreading birth-control information would be detrimental to society.
T. F. Uniform national divorce laws would solve the divorce problem.
T. F. All institutions (church, state, family, etc.) are of human origin.
T. F. A moral situation involves judgment and choice.
T. F. Criminals are usually illiterate.
T. F. Revolutionists usually come from the propertied class.
T. F. Government by divine sanction was sponsored by Rousseau.
T. F. Ethical standards are similar among leading religions.
T. F. Religious education in public schools is unlawful.
T. F. A rapidly shifting and uncertain civilization cannot have educational objectives.
T. F. Education has lost its certainty of ends.

SELECTED REFERENCES FOR ADDITIONAL STUDY

Chapman, J. C., and Counts, G. S. *Principles of Education.*

An excellent discussion of the sociological foundations of education in terms of objectives is given on pages 194–364.

Counts, G. S. *The Social Foundations of Education.*

This report of the American Historical Association deals with the social background of American education, discusses the trends and tensions in social institutions, and presents a philosophy and background. A list of interesting books is given on pages x–xii.

Demiashkevich, M. *An Introduction to the Philosophy of Education.*

Chapters VI, VIII, and IX are devoted to character building, nationalism, patriotism, internationalism, and leadership in a democracy.

Finney, R. L., and Zeleny, L. D. *An Introduction to Educational Sociology.*

This book presents some sociological insights into everyday problems confronting education and teachers. It contains excellent bibliographies and a glossary of sociological terms.

Good, Alvin. *Sociology and Education.*

Social group factors in education are discussed on pages 83–404. Good references are included for each social institution.

Hart, J. K. *Social Interpretation of Education.*

This book attempts to give an understanding of educational processes in a changing and complex world. A good bibliography is given.

Judd, C. H. *Education and Social Progress.*

This points out the fundamental aims of our society which the educational system must realize, and describes the kind of educational system likely to appear in the near future.

Kilpatrick, W. H. *Source Book in the Philosophy of Education.* 1934.

Quotations bearing upon mental hygiene are given on pages 182–86, and upon moral education on pages 189–221 and 470–86.

Kinneman, J. H. *Society and Education.*

Institutions of society are discussed on pages 417–97, and wise use of leisure on pages 501–35. Excellent book and magazine references.

Kuehner, Q. A. *A Philosophy of Education.*

Chapters XX–XXIII give selected quotations on education for health, vocation, play, culture and citizenship, moral life, and religious life.

National Education Association. *Research Bulletin*, vol. XII, no. 5, November, 1934.

An excellent discussion of modern social and educational trends in various fields of human activity. Well selected references.

National Society for the Study of Educational Sociology. *Second Yearbook.* 1929.

This is devoted to a discussion of Objectives of Education.

Peters, C. C. *Foundation of Educational Sociology.* 1930 edition.

This discusses the sociological foundation of the curriculum. It includes good annotated bibliographies.

President's Research Committee. *Recent Social Trends.*

A mine of valuable material in various social areas.

Smith, W. R. *Principles of Educational Sociology.*

Social groups are discussed on pages 103–293. Good references.

Tuttle, H. S. *Social Basis of Education.*

The goal of education is discussed on pages 3–118. Many book and magazine references are listed.

Some reading should be done in such books as:

Adams, *The Epic of America.*
Bagley, *Education, Crime, and Social Progress.*
Bagley, *Education and Emergent Man.*
Beard, *Whither Mankind.*
Beard, *America Faces the Future.*
Beard, *A Charter for the Social Sciences.*
Bent, *Machine Made Man.*
Berle and Means, *The Modern Corporation and Private Property.*
Boas, *Our New Ways of Thinking.*
Briffault, *Rational Evolution.*
Briggs, *The Great Investment.*

Bruner, *Some Suggestions for the Study of Modern Problems.*
Chase, *Economy of Abundance.*
Chase, *Men and Machines.*
Chase, *Technocracy; An Interpretation.*
Coe, *The Motives of Men.*
Counts, *Dare the Schools Build a New Social Order?*
Counts, *The American Road to Culture.*
Cubberley, *Changing Conceptions of Education.*
Dewey, *The Public and Its Problems.*
Everett, *Democracy Faces the Future.*
Fairchild, *Profits and Prosperity.*
Fisher, *Learn or Perish.*
Frank, *Thunder and Dawn.*
Johnson, *Youth in a World of Men.*
Kandel, *The Dilemma of Democracy.*
Kilpatrick, *Education and the Social Crisis.*
Kilpatrick, *Our Educational Task.*
Kilpatrick and others, *The Social Frontier.*
Leven-Moulton-Washburne, *America's Capacity to Consume.*
Lies, *The New Leisure Challenges the Schools.*
Loeb, *The Chart of Plenty.*
Lynd, *Middletown.*
Martin, *The Meaning of a Liberal Education.*
Minehan, *Boy and Girl Tramps of America.*
Moore, *We are the Builders of a New World.*
Mumford, *Technics and Civilization.*
Neuman, *Lives in the Making.*
Norse and others, *America's Capacity to Produce.*
Nystrum, *Economic Principles of Consumption.*
Polakov, *The Power Age.*
Rugg, *The Great Technology.*
Soull, *A Planned Society.*
Spencer, *Education* (1860).
Wallas, *The Great Society.*

CHAPTER X

THE HISTORICAL BASIS OF EDUCATION

It has been pointed out that the biological and psychological properties of man make his superior education *possible*, and that the social group makes man's education *necessary*. Now it is for the history of education to relate man's accomplishments in making the possible and necessary adjustments to the changing and increasingly complex social environment. The historical basis of education pertains to those eventful achievements in human progress which affect learning and furnish the background for modern educational opportunities. Only the briefest exposition of the character and significance of some of the outstanding steps in educational development can be undertaken here. For a more comprehensive treatment of past events connected with education, the reader is referred to a text devoted exclusively to the general history of education. The following discussion will, however, provide some perspective for the interpretation and appreciation of our educational institutions, and of the efforts exerted in the unfoldment of our modern educational heritage.

Informal education. In the beginning, and during a long period of savagery, all education was informal; that is, human learning was a purely incidental and undesigned feature of living, happening by mere chance quite unconsciously. Life, then, was crude, rudimentary, and straightforward. No complicated skills to be acquired and no accumulated folkways to be learned had yet been developed. The natural environment remained raw and unchanged, and social development was in its simplest and most elementary stage. The wild tribes inhabited their natural haunts among the forests, along the streams, and in the open fields. In this native state they did not require much more learning than did the higher animals. In fact, it was adequate for unassisted nature to bring them up in about the same way that it brought up other animals. Their learning came about as a by-product of individual experiences, and perhaps from a purely informal, haphazard, and imitative contact with other more experienced members of the tribe. All learning was without aim or direction, and quite incidental to the prime concern of existence. It was, therefore, contingent upon fortuitous circumstances and secondary to the things being done in the pursuit of life. While much human learning still takes place in an accidental and unpremeditated manner, primitive man was entirely dependent upon this informal education for a long space of time before any formal education appeared.

Formal education. Informal education continued to be adequate so long as man's surroundings remained so primitive and simple that he had no need for making unusual or complicated adjustments. Gradually there accumulated certain skills in the art of producing and using tools for gaining a livelihood and for self-defense, bits of useful information, and a beginning of a social environment of conventional usages and beliefs. There were now certain racial acquisitions which were either too involved or considered too important to be left entirely to a pure chance procedure. These included the fundamentals of making pottery, weaving, making and using bows and arrows, and the like, which were deliberately taught the youth by those who were most skilled and proficient in these arts. This instruction took place while sitting around the campfire, or during a day's activities in the manner of a crude form of apprenticeship. While a clear line of transition cannot be drawn between the informal and this formal education, it can be said at least that formal education began the instant an elder intentionally slowed up whatever he was doing for the purpose of having a youth observe and learn how it was done. At that moment the element of conscious instruction entered into the activity, and this motive is what differentiates formal from informal education. Formal education is entirely a human product. While the domestication of animals involves formal training, it is the human factor entering into it that makes it so. Formal learning existed among barbarous peoples for centuries before the civilizing processes reached the stage where it became necessary to have an institutionalized education.

Institutionalized education. Institutionalized education began among primitive people in the form of initiation and religious ceremonies. A state of social development was gradually evolved when it became desirable to set aside stated periods for the purpose of initiating the youth, according to a prescribed manner, into the activities and responsibilities of the adult life of the group. These ceremonies provided an impressive and effective way of promoting social control and solidarity within the group, and became a persistent and important feature of tribal life. In due form and with much solemnity the older members of the tribe impressed the initiates with the importance of such social qualities as tribal obedience and loyalty, and proper respect for authority and for elders. The sufficiency of physical strength and prowess, moral rectitude, and self-control for the responsibilities of adulthood were tested. Instruction was given relative to marriage conventions, warfare strategy, economic procedures, mythology, and other existing tribal traditions. A simpler initiation ceremony was also provided for the girls of the tribe. In these initiation ceremonies there was a close and intimate relationship between the instruction and the life-situations of the social group. The primitive initiation ceremonies provided universal training in social efficiency for the adulthood of the time, and were a forerunner of modern universal education of today.

Then, too, religious activities early became an important controlling factor in tribal life. Animistic beliefs and practices led to a rather elaborate and intricate system of prayers and sacrificial procedures for purposes of environmental control. Many myths, legends, and traditions relative to future life and the best preparation for it accumulated. As religious beliefs became more complex, and ritualistic practices more elaborate and intricate, it became necessary to provide religious specialists and leaders, and for these to have considerable professional training for their work. The most promising youth were selected for the priesthood. Not only did it become the function of the chief priests to train the novices to carry on the ritualistic ministrations, but the members of the tribe also required more or less training in the common beliefs and practices in order to keep their general support secure. Individual members of the tribe were taught to turn to the priest for all kinds of advice and information. The priests became the chief authorities and advisers in economic, military, and political activities, as well as in religious observances. The religious ceremony was the first formal educational agency with a special professional class set aside exclusively as teachers and leaders. This type of institutionalized education existed long before the social institution known as the school appeared.

The school. From the expansion of these early priestly functions the school in time resulted. As time went on the performance of religious rites and ceremonies took on more and more social significance. The priest's unique position as mediator between man and the gods made of them a most powerful group. Their leadership in non-religious as well as in religious activities became deeply established in the social fabric. With the development of a written language the priestly class obtained additional educational prestige, as it was they who acquired the difficult art of reading and writing. As a result of all this, the priests became the chief custodians of education and were the ones versed in all knowledge. They were the "scholars" and the learned men of the time. As civilization evolved and created a division of labor and of social classes, the specialized function of instruction inevitably remained with the priesthood. The establishment of schools as an instructional agency was a direct outgrowth of the primitive religious ceremonies. The priests were the teachers in the first schools, as well as the main benefactors from the instruction.

Class education. From earliest historic times down through the centuries to the late Middle Ages, school opportunities were limited to the select few of the priestly and ruling class. In such ancient nations as India, Egypt, and Persia, the teaching function was completely in the hands of the sacerdotal caste. One of the chief duties of this priestly caste was to study and teach the nation's sacred literature, and to maintain the rigid class distinctions, of which theirs was the highest. In India, some vocational education was provided for the soldier caste, which was composed of boys of the aristocratic class. In Egypt, some training in the practical arts was given to the few leaders in the industrial and trade fields. While China had a private rather than a priestly system of education, it was only the leisure class that had sufficient time or wealth to patronize the schools. These private schools prepared for China's extensive government examinations, the passing of which was a prerequisite to the holding of public office. Ancient Athens, too, educated its citizens by means of private schools; but Athenian citizenship was restricted to the relatively small free group of about one-fifth of the male population. In Rome, private schools were maintained for the purpose of training the upper classes for political life. Up to the Dark Ages, education was monopolized by either the sacerdotal classes or as private ventures, and was maintained for the inner circle exclusively.

During the Dark Ages education reverted to its earlier

Oriental status and became solely a priestly function. The medieval monastics were the custodians of learning, but even among these monks education became so neglected that it was estimated that at the time of Charlemagne only one priest out of a thousand could read. Charlemagne, King of the Franks and Emperor of the West, in about A.D. 800 not only attempted to remove this clerical ignorance, but also created for the nobility of his court a palace school and secured as its first teacher the most famous English theologian and schoolmaster of the time, Alcuin of York. In A.D. 875 Alfred the Great, King of the West Saxons, following the example of Charlemagne, established a similar palace school for the education of the nobility of his court. During the period known as the Revival of Learning the Medici of Florence, and many other ruling princes of various Italian city-states, sponsored court schools and brought to them as teachers the most famous of the Renaissance schoolmasters. All this early education was purely an upper-class affair.

Mass education. An important extension of educational advantages downward to a newly evolved middle class, in the form of guild and burgher schools, occurred during the later Middle Ages. Industrial enterprises and commerce flourished in the medieval cities of Western Europe to a remarkable degree, following the romantic crusades of the thirteenth century. The prosperity of the time caused merchants, bankers, and craftsmen to become an influential and wealthy social class, and put them in a position to provide educational advantages for their children. The medieval trade-guilds supported guild schools for the purpose of giving the children of their class the advantages of education. Some of these later became famous Latin schools, such as the Merchant Taylors' of London, which still exists. Vocational education was obtained through a system of apprenticeship. Besides the guild schools, the public officials of the growing medieval towns provided burgher schools, which gave elementary education to an increasing number of city inhabitants of the middle class. While both guild and burgher schools were taught by priests, these schools were dominated by the guild and city authorities and became much more secular than the church schools of the time. By the end of the Middle Ages there was a pronounced trend toward extending educational advantages to larger and larger numbers. The extent of educational opportunities and the variety of the school offerings increased with the advance of civilization.

A most powerful social force in extending education to the masses was the Protestant revolts of the early sixteenth century and the Catholic reaction which followed. It was the Protestant belief that the individual must be held responsible for his own salvation. This made it urgent that every one in order to be saved should learn to read and interpret the Bible and should participate in the religious services. To provide an opportunity for this learning the Protestant churches created vernacular parochial schools. In these elementary parish schools, reading, writing, and religion were taught to both sexes. After Lutheranism became the official religion of Germany, the church schools were absorbed into a state school system which received public support and at which attendance was made compulsory. Lutheranism and the Calvinistic concept of a state-church co-operation principle spread to many lands, including America, and was of far-reaching significance in providing education for the masses. In response to this Protestant movement the Catholic Church revised its educational endeavors, and also extended educational advantages to the masses of its faith. Many Catholic orders arose for promoting education. Among these the Jesuits for secondary education, and the Christian Brothers for elementary education, were outstanding. The Christian Brothers fostered vernacular elementary schools for the purpose of teaching boys religion and the three R's. Similar elementary schools for girls were promoted by other Catholic orders. These religious movements, together with the discovery of a paper-making process and the invention of the printing press, were largely responsible for extending primary education.

Education of women. Until very recent times the participation of women of all classes in educational opportunities has been meager and of the most elementary sort. From the earliest times the social status of women, with few exceptions, was that of a slave, or "a beautiful, lovely, delicate possession, to be loved and protected." The Greek philosopher, Plato, was more than two thousand years ahead of his times when in his *Republic* he decried any discrimination between the sexes and advocated the same education for men and women. At Rome's height, too, there were some who believed women were mentally equal to men. In fact the upper-class Roman girl studied the three R's with her brother in the private elementary schools. Roman paganism gave women a far wider sphere than did Christianity later. Saint Paul considered women definitely inferior to men, and advised that "if they have questions let them ask their husbands." The Christian Church kept women in a state of subjection and, unless they became nuns, limited their activities to home duties. Luther, the leader of the German Reformation, held that the aim of education for women was that they "may bring up their children, care for their domestics, and direct the affairs of their household."

While the Renaissance had also stressed women's place in the home, it did at the same time provide for some of them a cultural education. Renaissance women of the upper class were taught by some of the greatest schoolmasters of the time. The ladies of the House of Gonzaga at Mantua were instructed by the famous Vittorino da Feltre; and Queen Elizabeth by the great English scholar, Roger Ascham. In England, the sixteenth century was more favorable to the education of women than were the seventeenth and eighteenth. Puritanism stressed the return to the simple primitive Christian faith, with its "ask your husband" concept. This attitude was prevalent in early New England when Anne Hutchinson was banished for holding women's meetings to discuss and criticize the latest sermons, and when patriarchal despotism produced overbearing boys and subdued girls. Equal educational opportunities between the sexes is a comparatively recent American achievement actuated by frontier life, the industrial revolution, and the woman's rights movement.

Education of the handicapped. Society has always contained within it many individuals who are greatly handicapped in making successful social adjustments because of some defect in their biological equipment for learning. The biological deficiency may be an imperfection of the gross bodily structure, or an incompleteness of the cerebro-spinal development. The sense of hearing may be lacking and, through inability to perceive sounds, the natural accompaniment is a failure to acquire the power of speech. The sense of seeing either because of some innate defect or as a result of injury may be wanting. The use of a limb or limbs may have been lost or never possessed. The functioning of the brain may be faulty. Mental endowment has been found to follow the normal curve of distribution. There are innately all degrees of mental inferiority as well as of mental superiority. The mentally defective have been classified into certain arbitrary groupings or types. The idiot is the extreme case of mental deficiency, commonly congenital but sometimes due to disease or injury to the brain in early childhood. The imbecile is somewhat less mentally deficient than the idiot. The feeble-minded are incapable of normal mental development, but are superior to the imbecile and the idiot; and may, in fact, be only moderately inferior to normal intelligence. The moron belongs to the group of feeble-minded whose mental level is that of a normal child from eight to twelve years of age, inclusive. Abnormal mental development must not be confused with mental degeneration or insanity. The deaf-mutes, the blind, the crippled, and the mentally defective are a constant part of the social group, who are at a tremendous disadvantage in making social adjustments, and whose achievements are most difficult and limited.

Early society from time immemorial considered these unfortunates the victims of demons, made sport of their deformities, laughed at their stupidity, and oftentimes left them to perish through their inability to cope with the ever-increasing complexities of life. They composed a class of ignorant, repulsive, and despised beggars and outcasts. Until comparatively recent times their education was considered impracticable and unmerited. The education of defectives, except for the deaf, which began somewhat earlier, is mostly a humanitarian development of the nineteenth century. While a Spanish Benedictine did pioneer work in educating the deaf as early as 1578, new impetus was given to it by the manual alphabet devised in 1680 by George Dalgarno of Aberdeen; again in 1789 when a Frenchman, Abbé de l'Espée, greatly simplified this by devising a one-hand alphabet; and still later when there was developed in Germany an oral method of instructing the deaf. By this method the deaf, whose vocal organs are usually normal, are taught not only to speak more or less perfectly but to understand others by watching the movements of the lips and the facial expression. The oral method is now widely employed, and by it the deaf can learn to respond normally to all phases of the social environment not requiring actual hearing. The deaf, however, who are also actually dumb and unable to utter articulate sounds must continue to rely upon dactylology.

The education of the blind began in France in 1784, and two years later the first book for them with raised type was embossed in Paris. A little later (1825) Louis Braille, a French teacher of the blind, invented a system of printing and writing in which the characters were represented by tangible points or dots. More recently an interpoint type has been devised so that letters may be printed with opposing lines on both sides of a page as in an ordinary book. Many books are now published for the blind and most libraries are well stocked with them. The blind not only learn to read and write with great facility but also become skilled in many kinds of industrial work, accomplished in music, and proficient in various professional and civic activities. The effectiveness of the special methods of instruction is particularly obvious in such deaf-blind cases as Laura Bridgman and Helen Keller. The education of the mentally defective began in France also at about the same time as for the blind, but real success with them was the result of the work of the Frenchman, Séguin, in 1837. While the idiot is practically incapable of improvement from instruction and the imbecile but slightly, the feeble-minded of various grades are greatly benefited. An important by-product of teaching the mentally handicapped has been better methods of teaching normal children. Special education for crippled children as such began in Munich in 1832. Today it is common for state school systems to make provision for training children belonging to the seriously defective classes of society. It is better for the State as well as for these unfortunates to educate them for self-respect, self-support, and some form of usefulness.

Universal education. Eighteenth-century notions regarding the purpose and function of a political state gave progressive nations a new and enlarged concept of public education and its importance to national welfare. State-supported and state-controlled educational systems began to supersede earlier religious schools. The inevitable wider participation of the great masses in governmental affairs demanded the extension of literacy and the greater diffusion of pertinent knowledge. General manhood (and later female) suffrage, constantly increasing complexity of political problems, necessity for national solidarity and international understanding, and the like continually required better and more citizenship education, not only in the three R's but also about the physical and social world in which people lived. Up to the middle of the eighteenth century even the most modern nations had as yet provided but little formal education for the masses. At about this time the industrial revolution, with its factory system and city developments, aggravated bad social conditions to an extent that constructive educational measures were imperative. Child labor became a grave problem. While the English Parliament had, as early as 1802, passed certain child-employment regulations, it was not until after 1850 that the importance of child welfare received sufficiently widespread attention among humanitarians to result in much child-labor amelioration. Compulsory school attendance laws naturally followed child-labor legislation and state support of schools. While Germany (1619) and Massachusetts (1642) had had compulsory school attendance regulations as a by-product of the Protestant Reformation, these did not become widespread until after the middle of the nineteenth century. The compulsory-school age and the level of educational achievement have since constantly risen.

Compulsory school attendance has not only made education more universal for normal children, but has made it more general also for the handicapped. Special provisions are made for the deaf, blind, crippled, mentally defective, incorrigibles, orphans, poor, tubercular, stammerers, foreigners, illiterates, and others who can profit by it. The demand of a heterogeneous school population for appropriate schooling and equal educational opportunities, together with the addition of science instruction, has markedly expanded educational service. France and Germany were among the first to respond to the modern industrial world by providing technical, agricultural, and vocational schools. Today, few phases of modern life are independent of schooling. The so-called frills include many of the new demands of a changing civilization. Public education has become practically unlimited and all-reaching. Modern society is forced to assist effectively all members of the social group to adapt themselves to the complicated civilization which is being developed.

TOPICS FOR DISCUSSION

1. Since modern times seem to demand innovations in educational practice, what are the advantages of some familiarity with past educational experiments and developments?
2. What were the advantages and disadvantages to cultural progress in the fact that early tribal education was controlled by the priests?
3. Justify the statement that the circumstances of pioneer life tended to promote equal educational opportunities for women.
4. What new obligations as to types of educational service are justly imposed upon a state when it adopts a policy of compulsory education?
5. Under what circumstances have most of the so-called frills been introduced into education? How would you justify them to a critical taxpayer?
6. What differences are there between the obligations and responsibilities resting upon the schools of a democracy, and those of an autocratic government?
7. In most modern school systems there is a greater per capita expenditure for the training of sub-normal children than for the education of those of ability and promise as future civic leaders. How can you justify this?

SUGGESTED EXERCISES FOR STUDY AND DISCUSSION

1. Match:

—— Bacon
—— Basedow
—— Comenius
—— Froebel
—— Herbart
—— Locke
—— Milton

(1) *Book of Method*
(2) *Education*
(3) *Education of Man*
(4) *Emile*
(5) *Great Didactic*
(6) *Institutes of Oratory*
(7) *Leonard and Gertrude*

—— Mulcaster
—— Pestalozzi
—— Plato
—— Quintilian
—— Ratke
—— Rousseau
—— Spencer

(8) *Methodus Nova*
(9) *Novum Organum*
(10) *Outlines of Educational Doctrine*
(11) *Positions*
(12) *Republic*
(13) *Thoughts Concerning Education*
(14) *Tracte on Education*

2. Select the best response:
—— The basis for universal education was laid by the (1) Athenians (2) Christians (3) Orientals (4) Romans (5) Spartans
—— The Romans were (1) artistic (2) creative (3) imaginative (4) intolerant (5) practical
—— The revival of classical learning was called (1) Asceticism (2) Feudalism (3) Humanism (4) Monasticism (5) Realism (6) Scholasticism (7) Subjectivism
—— Germany was the first to establish schools for the (1) blind (2) crippled (3) deaf (4) feeble-minded
—— Orbis Pictus was written by (1) Ascham (2) Alcuin (3) Comenius (4) Fénelon (5) LaSalle

3. Indicate whether these statements are true or false (verify):
T. F. The history of Oriental education has some value for modern teachers.
T. F. The Rule of St. Benedict had educational implications.
T. F. Education in Europe was promoted by the Crusades.
T. F. The educational results of the Reformation were the same in England and on the Continent.
T. F. The Saracens did much for education.
T. F. Individualism was repressed by the Athenians.
T. F. The Spartans contributed more to our education than the Athenians.
T. F. The Athenians contributed more to our education than the Romans.
T. F. Modern education began under church control.
T. F. Locke and Comenius agreed on the question of pansophism.
T. F. Comenius proposed a ladder system of schools.
T. F. The Christian Brothers were organized before the Jesuits.
T. F. The culture epochs theory was elaborated by Ziller.
T. F. Pestalozzi accepted faculty psychology.
T. F. Locke was an advocate of formal discipline.
T. F. Woodworking was taught in Germany prior to Fellenberg.

4. Arrange in chronological order:
—— Battle of Tours
—— Fall of Constantinople
—— Fall of Corinth
—— Period of Greek brilliance
—— Pestalozzi at Yverdon
—— Petrarch's researches

—— Fall of Rome
—— Founding of Jesuits
—— Bacon's Scientific Method
—— Luther nails up theses
—— Raike's Sunday School
—— The Fisher Act in England
—— University of Halle
—— University of Virginia

SELECTED REFERENCES FOR ADDITIONAL STUDY

Cole, P. R. *A History of Educational Thought.*

A discussion of educational thought from ancient to modern times Has very complete bibliographies.

Cubberley, E. P. *The History of Education.*

A comprehensive account of educational development. Use the index for finding material of special interest.

Cubberley, E. P. *Readings in the History of Education.*

A collection of sources and readings to illustrate educational development. Read cross-references indicated in the "History" volume.

Davidson, T. A. *A History of Education.*

A brief but comprehensive statement of the evolutionary process in educational development.

Dobson, J. F. *Ancient Education.*

This little book interprets the meaning of ancient education to later ages.

Duggan, A. P. *A Student's Textbook in the History of Education.* 1927 edition.

A brief and carefully written book. Has good bibliographies on many topics, and contains helpful outlines.

Graves, E. P. *A History of Education.*

A very well written history of education. Use index for topics desired.

Hart, J. K. *Creative Moments in Education.*

A documentary interpretation of the history of education that is thought-provoking.

Hart, J. K. *The Discovery of Intelligence.*

An interesting story of the growth of social heritage and of education.

Messenger, J. F. *An Interpretative History of Education.*

A book that is stimulating and easily read. See pages 3–253.

Monroe, P. *Text-book in the History of Education.*

A very complete account of the history of education. Use the index for finding appropriate sections.

Monroe, P. *Source Book in the History of Education.*

Contains much source material bearing upon educational development. Use index for finding type of material desired.

Reisner, E. H. *Historical Foundations of Modern Education.*

Presents the historical material having a special bearing upon educational practice. Includes an excellent annotated bibliography for each topic.

CHAPTER XI

THE HISTORICAL BASIS OF EDUCATION
(*continued*)

American education. American education has been a unique development, differing much from that of other modern nations. European education involved strict class distinctions, whereas American education evolved from a democratic principle of equal rights and opportunities for all. There developed in Europe the vernacular elementary school system for the great masses, and the classical secondary and higher school system for the directing classes. In Prussia and other German States there was created for the masses the *volksschule*, followed by continuation schools of a vocational nature; and for the leaders the classical, and later the scientific, *gymnasia*, preceded by preparatory schools and followed by the universities. In France there was established for the masses the *primary* school preceded by maternal schools and followed by superior primary and continuation vocational schools; and for the leaders the *lycée*, preceded by preparatory schools and followed by professional institutions of higher learning. In both Germany and France the elementary schools educated the common people of both sexes for citizenship and for life, and the secondary and higher schools prepared the males of the upper classes for political and professional leadership. In contrast with this European dual or two-class educational system, there was evolved in America a single educational ladder whereby every child had the opportunity of continuing from one school to the next higher. The political and social philosophy of a nation determines its educational organization.

In England, education for the masses was long and resolutely held to be a purely charitable or philanthropic matter, and for the classes a strictly private affair. It was not until 1833 that the merest beginning of a different attitude arose in the form of a small government aid for elementary education, and not until the Fisher Educational Act of 1918 that anything which might be called a truly national system of education was established. This system included the local and voluntary institutions which comprised the *elementary* school, preceded by infant schools and followed by local secondary schools and the new city universities; and the endowed and proprietary institutions which comprised the old *secondary* schools, preceded by preparatory schools and followed by the old universities. By a liberal system of scholarships and maintenance grants, secondary and higher educational opportunities became possible for all highly capable students. The educational conditions existing in Europe, particularly in England, during the period of American colonization had a significant bearing upon the beginnings of American education. Those interested in the relative merits of different educational systems are referred to texts devoted to Comparative Education. In general, the development of education in the United States, with approximate dates, may be divided into the following five main periods:

1. European transplantations	1600–1775
2. Educational transition	1775–1825
3. Public school awakening	1825–1850
4. Educational expansion	1850–1930
5. Educational readjustment	1930–

European transplantations (1600–1775). The transplantation period in American education extended from the first settlements of the early Colonies up to approximately the time of the Revolutionary War. For upwards of the first one hundred and seventy-five years of American life there were reproduced in the New World the same educational attitudes and schools with which the immigrants were familiar in the Old World. It was educationally significant that, during this period of American colonization, religious zeal and bigotry were on a rampage in Europe as a result of the Lutheran, Calvinistic, and Anglican Revolts, and the Catholic Reaction; and that charity and private philanthropy provided in England what education there was at that time for the masses. This European background had a profound influence upon the beginnings of American education.

As a consequence of different European transplantations there were established, among the thirteen original Colonies, three rather distinct attitudes toward education. To the Southern Colonies, which were settled mainly by Anglican royalists, there was brought from England the charity- or *pauper-school idea.* Thus, as in England, the upper-class children of Virginia, for example, received their elementary education from tutors in the home or in select tuition-schools, their secondary education in private Latin Grammar Schools, and their higher education by returning to England for study or, after 1693, by attending William and Mary College; while the lower-class children were recipients of charity education and apprenticed. Secondary and higher education was mainly for the few upper-class boys who were planning to become Anglican ministers.

To the Middle Colonies, which were settled by tolerant and heterogeneous groups of various religious sects and nationalities, there was brought from Europe the Lutheran, the Calvinistic, and the Catholic *parochial-school idea.* According to this concept, education was purely a church matter. There was established in connection with each church a parish elementary school, where the minister gave certain rudimentary and religious instruction in the native language of the sect. Some denominations founded secondary and higher institutions for training future ministers of their respective faiths, but otherwise anything beyond elementary education was left to private ventures and for those who could afford to pay for it. Neither the Southern nor the Middle Colonies considered that education might possibly be a function of the government even more than of the family or the church.

In the New England Colonies, which were settled by the intolerant English Puritans, there was brought a religious-state concept that involved a *government compulsory-maintenance idea* of education. This theory, in common with the Middle Colonies, held to the Protestant importance of everyone being able to read and understand the Bible; and, in addition, it maintained a strict adherence to the Calvinistic church-state co-operation principle. The combined civil and religious New England town was made feasible by the Puritan intolerant exclusion of all other religious faiths. The early failure of voluntary home instruction led in Massachusetts, for example, to the famous Law of 1642 directing town officials to impose a fine upon parents who failed to have their children taught reading, writing, and religion. Then, five years later, the still more famous Law of 1647 was enacted which compelled towns of fifty families to establish and maintain elementary schools for all the children of all the people, and towns of one hundred families a Latin Grammar School for the boys who were planning to enter Harvard College (founded 1636) and become Congregational ministers. These two laws represent the first time that, among English-speaking people, the State had asserted such educational demands upon local communities. The Massachusetts Law of 1647 providing for the establishment of local elementary and secondary town schools and compelling taxation for their support became, by the later separation of church and state, the basis of the American public school system.

Educational transition (1775–1825). From the War of Independence to the work of the educational statesmen, Horace Mann and others, was, in the new American Nation, a period of educational transition. Religious educational transplantations then definitely gave way for a more strictly American type of public secular education. Prior to the Revolutionary War each colonial generation was farther removed from European influences and more exasperated with British treatment. The "native sons," through frontier life, became less religious and more secular and self-sufficient. Then, too, following King Philip's War the New England town began to be disintegrated by inhabitants moving farther away from the center until it was no longer feasible for children from the outskirt settlements to attend the central town school. There arose the "moving school," which allowed the teacher to divide his time among various settlements in proportion to their school support. For the largest communities this led to a district school with a local school committee. The disintegration of the New England town, together with the new religious tolerance, tended directly toward a secular district school system for New England. The Revolutionary War itself had a disastrous effect upon existing colonial schools, and turned the attention of the leaders toward matters political and economic. When the rise of manufacturing, growth of cities, and extension of suffrage forced some attention to education again, it was to meet a new economic, political, and social order with constitutional guaranty of religious freedom. The new educational aim became preparation for living in a young American democracy.

The new motive for education stimulated, for their own welfare, some of the States and the National Government to consider school support. As early as 1779, the sagacious Jefferson proposed for Virginia a comprehensive system of universal education at state expense. While the Virginians did not accept his plan, it did result in pauper children being able to attend private schools at state expense and in the founding of the University of Virginia (1819). Along with the New England States, New York State contributed much educationally by establishing, in 1787, the first state board of education in America; by early assisting, with state funds, private educational efforts considered advantageous to the public; and through the developments in New York City which resulted (1842) in the creation of a city board of education. With the admission of Ohio in 1802, the Federal Government began a land-grant policy for common schools and university purposes which was continued with other States.

Besides the private *Academy* which flourished during this period as the transitional secondary school, there were present several philanthropic educational movements. In many cities *City School Societies* were organized to provide some education through private subscriptions for poor children otherwise uncared for educationally. There came from England to Virginia, in 1784, the *Sunday School*, which spread throughout the South and reached somewhat into the Middle States. Its purpose was to give rudimentary and non-sectarian religious instruction to working children on Sundays. There came from England to New York City, in 1806, the Lancastrian non-sectarian *Monitorial School*. This unique scheme made it possible for a teacher, by utilizing the brightest pupils as assistants, to maintain a school of four or five hundred pupils at very little cost. The movement spread to many States, included both elementary and secondary education, and was very influential in the development of free public education in America. There came from Scotland to Boston, in 1818, the *Infant School*, which provided education for children too young to attend the elementary school. It absorbed the colonial dame school, and later became the primary department of the elementary school. These philanthropic activities, as well as the social, political, and economic influences of the time, helped to awaken an educational consciousness and, by the end of the period there existed, among far-sighted public leaders and the newly organized workingmen, a demand for free, tax-supported, state schools.

Public school awakening (1825–1850). The twenty-five years between 1825 and 1850 constituted in American history a period of public school awakening. This arousal of an educational consciousness was characterized by a general agitation, through organized propaganda, legislative battles, referenda to the electorate, bitter conflicts with church and private school interests, and personal controversies among individuals with opposing viewpoints. The struggle centered largely about the following seven cardinal propositions:[1]

1. General taxation of all property to support free schools.
2. Elimination of the pauper-school concept.
3. Abolition of individual charges for school attendance.
4. Elimination of sectarian instruction and control.
5. Establishment of state supervision and control of schools.
6. Upward extension of school system to include the high school.
7. Crowning the school system with the state university.

The proper settlement of these fundamental issues was essential to the establishment of a free, tax-supported, non-sectarian, state controlled, public school system.

Certain classes of people aligned up for and against these propositions, and offered reasons for their position.[2] Those who supported the public school movement were, as a rule, New-Englanders, Calvinists, city residents, intelligent workingmen, far-sighted public leaders, non-taxpayers, and humanitarians; while those who opposed the idea were generally Southerners, churches fostering parochial schools, rural residents, aristocratic classes, conservatives, taxpayers, private-school proprietors, and non-English-speaking classes. Those favoring public tax-supported schools argued that:

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[1] E. P. Cubberley. *Public Education in the United States*, 1934 edition, p. 177.

[2] See Cubberley. *Public Education in the United States*, 1934 edition, pp. 165–66.

> Education tends to prevent pauperism and crime, to reduce poverty and distress, to increase production, and tends to eliminate wrong ideas as to the distribution of wealth.
>
> A common state school would prevent class differentiation so dangerous in a Republic; education at public expense is the natural right of all children in a Republic.
>
> Old church and private-school education had proved utterly inadequate; a system of religious schools is impossible in such a mixed nation as our own.
>
> The pauper-school idea is against the best interests of society and a constant offense to the poor.
>
> Education as to one's civic duties is a necessity for an intelligent exercise of suffrage, and for the preservation of republican institutions; the increase of foreign immigration is a menace to our free institutions, and these new elements can best be assimilated in a system of publicly-supported and directed public schools.
>
> The taking over of education by the State is not based on consideration of economy, but is the exercise of the State's inherent right to self-preservation and improvement; the social, moral, political, and industrial benefits to be derived from the general education of all compensate many times over for its costs.
>
> Only a system of state-controlled schools can be free to teach whatever the welfare of the State may demand; a State which has the right to hang has the right to educate.

Those opposing free public schools maintained that:

> Public education would not benefit the masses, who were already as well cared for as they deserved.
>
> Public schools would make education too common and would educate people out of their proper position in society; would tend to break down long-established and very desirable social barriers.
>
> Public education would injure private and parochial schools,

> in which much money had been put and "vested rights" established; state schools might injure church progress and welfare; there was priestcraft in the scheme; the purpose being first to establish a State School and then a State Church.
>
> Those having no children to be educated should not be taxed for schools; taking a man's property to educate his neighbor's child is no more defensible than taking a man's plow to plow his neighbor's field; the State may be justified in taxing to defend the liberties of a people, but not to support its benevolences; the industrious would be taxed to educate the indolent.
>
> State schools might supplant instruction in non-English languages.
>
> The State has no right to interfere between a parent and his child in the matter of education.
>
> Taxes would be so increased that no State could long meet such a lavish drain on its resources; it is impractical, visionary, and "too advanced" legislation.

Certain States naturally became the centers where the different phases of the contest were most bitterly fought out between opposing factions. The scenes of many pivotal conflicts were such States as Indiana, Kentucky, Pennsylvania, New Jersey, New York, Massachusetts, Connecticut, and Rhode Island. Among the great educational leaders of the time were James G. Carter, Horace Mann, and Henry Barnard. By the end of this awakening period those who favored an American public school system succeeded in its establishment, in principle at least, but there was still a long way to go before the general acceptance of the principle in practice.

Educational expansion (1850–1930). The fourscore years following 1850 was a period conspicuous for educational expansion. Not only did the American public school system, previously established in the Northern States, spread during the years after the Civil War throughout the Southern States and firmly fix itself from the beginning in the new Western States as they were occupied by early settlers, largely from the "good school" States, but there was also during this time a vast widening and increase of public school functions and facilities. The creation and extension of the public school idea necessitated the training of great numbers of teachers. As a result, the normal school, first established privately in Vermont in 1823, and as a state institution in Massachusetts in 1839, multiplied rapidly after 1870 until it or its successor, the teachers college, has today become an integral part of all state educational organizations.

Educational expansion during this period was stimulated by the new psychological ideas of Pestalozzi, Froebel, and Herbart, which filtered into America from abroad. Pestalozzian influence after 1860, through the Oswego Movement, spread rapidly and widely over the entire country. It carried with it the extension of educational opportunities for juvenile delinquents; the replacement of old teaching procedures with new psychological methods; and the introduction of better textbooks, richer subject-matter, and more careful teacher training. Almost contemporaneous with this, there came also the Froebelian influence for the establishment of kindergartens as the lowest rung of the American educational ladder, and the addition of play, manual training, and nature study as an essential part of the elementary school curriculum. Then, after 1890, came the Herbartian influence, greatly clarifying educational aims, modifying teaching procedures, and enriching the elementary school content by adding history and literature as important subjects of study. The American assimilation of these important contributions from abroad furnished the beginning from which there was evolved the present scientific and psychological methods of instruction, and the extensive expansion of our modern elementary curriculum. Cubberley's excellent classification of the elementary school subjects[1] arranges them in the order of their chronological introduction, and shows how types of subjects approximately coincide with special educational emphasis and developments:

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[1] E. P. Cubberley. *An Introduction to the Study of Education*, p. 18.

Drill Subjects (Earlier Schools)	Content Subjects (1860–1890)	Expression Subjects (Modern additions)
Reading	Geography	Kindergarten Work
Writing	History	Music
Spelling	Literature	Drawing
Language	Civic Studies	Manual Arts
Arithmetic	Manners and Conduct	Domestic Arts
	Nature Study	School Gardening
	Agriculture (Later)	Vocational Subjects
	Health Work (Later)	Plays and Games
		Auditorium Activities
		Civic Activities

Over and above the stimulus of new psychological ideas from abroad, educational expansion was the natural consequence of the vast social changes produced in America by the increasing foreign immigration and the disturbing industrial revolution. Public education was not only the one means for assimilating into American citizenship the great numbers of non-English-speaking foreigners, but there was also placed upon the public school a greater and more protracted responsibility as a result of the changes which the Industrial Revolution made in the home and in other aspects of social life. The great educational philosopher, John Dewey, exerted immeasurable influence in directing the expanding school to meet the changing needs for social efficiency in the complex American democracy.

Since the Spanish-American War of 1898, education in the United States has undergone unprecedented development. A greater, better, and bigger public school system from the lowest grade through the university was promoted by educational commissions, school-survey committees, public agitation, and school legislation. The interest of the individual child became the center of the educational process, flexible grading plans to meet individual needs were invented, special schools and classes for the education of all kinds of delinquents and defectives were created, child health and welfare became an important feature of school work; all with the result that educational advantages of every kind were extended to include the needs of every child, and even adults, without discrimination. For these educational reasons, and economic ones as well, children stayed in school longer, high schools grew in attendance by leaps and bounds, vocational education developed at a marvelous pace, the public school widely extended its work to those not in regular attendance, and the university expanded its offerings and extended its facilities to every qualified person on the campus and off. The last twenty-five years of this period was especially stimulated by scientific adventures in the study of education and by the movement toward reorganization of schools, school work, and state departments of education; until, beginning about 1930, a sudden halt occurred in educational advances as a result of the world-wide economic disturbances and a panicky public reaction.

Educational readjustment (1930–   ). While the immediate result of the economic depression upon the schools has been drastic educational retrenchment, a longer view would seem to characterize it better as ushering in a period of educational readjustment. The retrenchment aspects, however, have been serious and cannot be overlooked. Appropriations for school purposes were severely curtailed, with the result that many important school services and activities were suddenly cut off, teaching forces were recklessly minimized, thousands of teachers were thrown among the ranks of the unemployed, salaries were violently slashed, school terms were cut short, many schools were actually closed, needed building construction and repairs were suspended, essential textbook and instructional material needs were disregarded, institutions of higher learning were dealt heavy blows, and all progressive plans and developments were intercepted and repressed. The increased enrollments at the higher levels of learning, recruited through unemployment and child-labor laws, have placed upon secondary and college education a maximum of burden and responsibility with at the same time a minimum of support and encouragement. Some of the early alignments against public schools, discussed on pages 202–203, with many of the same arguments, have reappeared and made themselves heard in state legislatures, and elsewhere, to the extent that public faith in modern education has been weakened temporarily and, in some States, the status of the public schools has been set back for from ten to fifteen years. The educational reactions during this depression have been contrary to those of the previous depressions, when the schools in each case were given additional support and encouragement for meeting their increased responsibilities and their more complex problems.

Through it all, however, there remain the substantial citizenry and wise leaders who have not lost faith in our modern school system, who know full well that equality of educational opportunity is basic to our social system, and who see beyond the immediate disturbances to a new and better type of educational planning for all. The period of retrenchment has been accompanied with critical scrutinies and revaluations, which will have permanent and inestimable value in future educational developments. Believing that the educational rearrangements and reorganizations initiated by the depression are in the long run more significant than the temporary retrenchments and other pangs of bringing into being a new social and economic order, the authors prefer to designate this period as one of educational readjustment.

The schools are being made over in many ways which will remove their most glaring defects, will increase their effectiveness in society, and will again bring them into general good repute. New school tax sources and more modern ways of financing public education are being evolved to replace the antiquated and broken-down ones. State and federal support of public schools is gradually supplanting local support, and educational opportunities are thereby becoming better equalized. The Federal Government is beginning to recognize its responsibility in maintaining educational standards throughout the country, and federal interest and financial aid in education are slowly becoming established as an accepted policy. Long strides are being taken in the improvement of the preparation of teachers for their work. The abolition of child labor, with its educational implications, is becoming a reality. A new concept of adult education is being developed. New aspects of vocational guidance and vocational education are coming to the fore. Institutions of higher learning are undertaking fundamental reorganizations in the light of their growing responsibilities in modern society. Teachers colleges are becoming regional colleges. Educational principles, policies, and objectives, are being settled anew. School teachers are becoming conscious of their responsibility to the future as never before, and are rapidly assuming a positive social-control attitude and influence. A planning society makes new demands upon education which must be met. A new philosophy of education is being developed — against the wishes of privileged classes, in opposition to the traditional status quo function of the school, and contrary to the naturally conservative tendency of human nature. History of education is being made anew during this period of readjustment which is remarkable and critical.

TOPICS FOR DISCUSSION

1. List, in the order of their importance, the factors responsible for the development of an educational system in America unlike that of other countries.
2. Outline the arguments which you would use in attempting to convince a well-to-do taxpayer, without children of school age, that he should willingly help to support excellent school facilities for all children of the community.
3. How did the great influx of immigrants, especially from 1830 to 1850, influence the purposes and content of public education?
4. At what age-level should the State cease to provide free public education? Justify your answer.
5. To what extent did factors, other than economic ones, tend to weaken public faith in our school organization, facilities, and services as they existed in 1930?
6. Compare the advantages and disadvantages in the shifting of the larger part of the burden of educational support from local units to the State and Federal Governments.
7. What characteristics of our system of popular education have been particularly favorable to our national progress?

SUGGESTED EXERCISES FOR STUDY AND DISCUSSION

1. Indicate whether statement is true or false (verify):
    T. F. America has followed the policy of isolation in educational affairs.
    T. F. American elementary and secondary education are traceable to the same source.
    T. F. The secularization of public schools was a simple process.
    T. F. Private colleges were handicapped by the Dartmouth College Case.
    T. F. Tax support and state control are intimately related.
    T. F. Secondary school development was hindered by the Kalamazoo Case.
    T. F. It was natural that early colleges should be denominational.
    T. F. Adult education is a rather old educational practice.
    T. F. The Federal Constitution has several educational provisions.
    T. F. The North after the Civil War took the proper educational attitude toward the South.
    T. F. History as a school subject was stimulated by the Civil War.

T. F. It is hard to account for the development of the dual system of education in Europe.
T. F. In Colonial Massachusetts the State was servant to the Church.
T. F. The different educational attitudes of Massachusetts and Virginia had more than a religious basis.
T. F. The Massachusetts Laws of 1642 and 1647 had equal educational significance.
T. F. Girls and boys had equal educational advantages in America from the beginning.
T. F. It was natural that the town schools rather than private schools should have taken the lead in adding new subjects.
T. F. The district school system has outlived its usefulness.
T. F. The influence of the Louisiana purchase upon education was detrimental.
T. F. American practice is inconsistent with the American theory of free schools.
T. F. Community school control is a State delegated authority.
T. F. Teachers Institutes are as necessary today as they were when Barnard first organized them.
T. F. We have better schools than our parents had.

. Select the best response:

—— The American public school attitude was originally fostered by the (1) Middle States (2) New England States (3) Southern States
—— The principle of school taxation was mainly promoted by the (1) dame school (2) infant school (3) monitorial schools (4) Sunday Schools (5) school of three R's (6) writing school
—— Public schools were favored by (1) intelligent working men (2) rural residents (3) private school proprietors (4) taxpayers (5) conservatives
—— Public schools were opposed by (1) city residents (2) Calvinists (3) Non-taxpayers (4) humanitarians (5) aristocratic class
—— Agricultural and technical education came through the efforts of (1) Fellenberg (2) Froebel (3) Comenius (4) Herbart (5) Pestalozzi (6) Rousseau
—— The great educational philosopher who administered the progressive schools of St. Louis was (1) Barnard (2) Cheever (3) Dewey (4) Harris (5) Mann (6) Parker
—— The school of the three R's developed from the (1) charity school (2) dame school (3) Latin grammar school (4) parochial school (5) writing school
—— Education makes greatest progress during times of (1) eco-

nomic depression (2) intense political agitation (3) peace (4) religious fervor (5) warfare

—— Educational development was least affected by (1) agricultural development (2) city school societies (3) extension of suffrage (4) immigration (5) public demand (6) rise of cities

SELECTED REFERENCES FOR ADDITIONAL STUDY

Cubberley, E. P. *Public Education in the United States.* 1934 edition.

This is a history of American education that is comprehensive and interpretative. It has very complete bibliographies. Use index for finding sections of special interest. The earlier 1929 edition is more concise and appropriate for consecutive reading, but lacks much in illustrative detail.

Cubberley, E. P. *Readings in Public Education in the United States.*

This is an interesting collection of sources and readings to illustrate the history of educational practice and progress in the United States. The Table of Contents, and the cross-references indicated in the 1934 History volume, will serve as a guide in selecting appropriate readings.

Finney, R. L. *A Brief History of the American Public School.*

A very concise but good account of the development of educational principles, practices, and problems, in America. Very good for consecutive reading.

Kandel, I. L. *Twenty-Five Years of American Education.*

A collection of essays on many phases of educational development.

Knight, E. W. *Education in the United States.* 1935 edition.

This is especially good on the development of education in the Southern States and from the viewpoint of the South. It has good bibliographies.

Messenger, J. F. *An Interpretative History of Educatioh.*

An interesting account of the development of American education is given on pages 257–369. It is stimulating reading.

Reisner, E. H. *The Evolution of the Common School.*

This presents the evolution of the particular aspects of elementary education in which classroom teachers should be specifically interested.

Woody, T. *A History of Women's Education in the United States.*

This is a very complete two-volume work on the education of women. Use index in finding topics desired for reading.

PART III

PHILOSOPHY OF AMERICAN EDUCATIONAL PRACTICE

CHAPTER XII

ADMINISTRATIVE ORGANIZATION

The function of administration. When the function of educational administration is reduced to its simplest terms, its justification is in providing continuously favorable conditions for learning. That naturally includes adequate physical facilities, the selection and assignment of teachers, the classification and grouping of pupils, and similar responsibilities calculated to furnish each learner with the opportunities, associations, and guidance most appropriate for his needs and level of advancement. As each of these is analyzed, there is revealed a diversity of detail warranting the complex administrative organization to be found in all our larger school systems. Our purpose at this time goes no further than a consideration and appraisal of the major principles involved in educational administration in the light of its essential function as noted above. Continual reference to this basic service in evaluating administrative relationships is not only important for clarifying our philosophy of educational practice, but it is a salutary reminder for school administrators themselves who are constantly tempted to regard their elaborate organization as an end in itself.

The basic facts and principles upon which a philosophy of school administration must be founded are derived from the fields of scientific study already discussed as fundamental. Considerations as to the hygiene and appropriateness of buildings and equipment for growing children of a certain age require primarily a knowledge of pertinent biological data. Courses of study, instructional facilities, and personnel direction demand psychological justification, with sociological implications playing at least a minor part. In such matters as diversity of program and organization for the various educational levels, adaptations to local needs, and provisions for adequate financial support, basic social considerations are usually of foremost importance, although we again find overlapping and interrelated factors which preclude sharp differentiation. Recognition must also be given to historic and traditional influence and practices, sanctioned by custom, which must be understood and given due respect in practical administration. In the light of such underlying facts and principles, we shall now seek to survey and appraise the major features of educational administration and organization as these have developed in modern practice.

The major divisions of school organization. Since the function of administration is to provide the best available working conditions, its problems vary widely with the maturity of the learners, the selection and character of the student or pupil groups, and the special aims of the educational unit. On that account it is well to examine at the outset the distinctive divisions or levels of school organization. The characteristic features and peculiar functions of each will naturally be reflected in modified administrative treatment and service.

Although the divisions of elementary, secondary, and higher education are familiar to everyone, the peculiar functions of each and the considerations which justify the distinctive organization of each division are not so well known. A clear conception of educational organization requires some recognition of the characteristic features of each of these divisons, and an examination of the peculiar part which each plays in preparing citizens for life and service in a modern democratic society.

The elementary school. It is in the elementary school that the democratic ideal of universal education is most nearly attained. Here are gathered the most cosmopolitan assemblage of childhood to be found in all the world, and for a few critical years in this school all the children of our conglomerate population are to receive the basic training for free citizenship and responsible participation in our social life. Not only are those years the most plastic and responsive which the school can hope to influence directly, but they provide also the total school experience which many children secure. This period constitutes our nation's great opportunity to develop in her future citizens the skills, information, attitudes, and loyalties which should belong to all and which are essential both to the unity of our national life and to effective participation in it. The educational opportunities of the elementary school should, therefore, be made rich and abundant for the individual child, but the predominant aim in the school experiences at this level should be social integration through the acquisition by all of those educational outcomes basic to a democratic society.

In accordance with this responsibility, the elementary school has regularly given much, perhaps relatively too much, attention to the fundamental skills and tools of learning as these relate to reading, communication, and calculation. With the first great waves of immigration nearly a century ago, it was realized that the so-called three R's were inadequate to give social unity to a mixed population, and there were added materials dealing with our national history, our pioneer aspirations, and our territorial resources. Thus history and geography came to constitute the early program of social studies. More modern recognition of the common need for health education and for cultural, creative, and recreational opportunities has resulted in the more enriched and diversified program now found in the better elementary schools.

The administration of elementary schools obviously calls for broad understanding and tolerant sympathy. In such a diversified assemblage, there will naturally be numbers of dull pupils, unsocial pupils, maladjusted and rebellious pupils, and pupils presenting disconcerting and perplexing problems as they come directly from unhappy home conditions, yet there must be a sympathetic welcome for these as well as for the attractive ones. Along with helpful consideration for individual difficulties there should constantly be maintained, in classroom and on the playground, a truly democratic spirit and program of activities. Teaching methods, selection of instructional materials, and classroom organization will all receive special consideration in later chapters. It will suffice now to emphasize the fact that the elementary school offers the first introduction to organized society for young America, and that its influences as well as its direct training will be determining factors in their later quest for success and happiness.

The secondary school. The American secondary school is a truly remarkable American development. In no other nation has the ideal of universal secondary education been so generally accepted. Although this ideal has not been fully attained in America, the courageous, and sometimes even lavish outlays in buildings and facilities for offering a high school education to all our boys and girls furnish convincing evidence of popular belief in the desirability of such training. In almost every community, the local high school is the chief object of civic pride, both for its architectural pre-eminence and as a symbol of community faith in the secondary school as a guaranty of better things for the individual child and for the community. An increase of more than a thousand per cent in secondary enrollment during the past half-century, transforming the traditionally selected group into a mingled, cosmopolitan throng, almost as representative as the elementary school of our diverse population, has created a condition demanding a new philosophy of secondary education.

The impartial student of education, surveying critically the facts, is compelled to admit that procedures and practices in the secondary schools still lag far behind the obligations of modern conditions. Although the *Commission on the Reorganization of Secondary Education* emphasized the need of a new philosophy appropriate to changed conditions when their report, known as *Cardinal Principles*, appeared in 1918, their admirable statement of modern objectives, while widely known through theoretical discussions in university courses, has not yet found general acceptance as a guide for practice. Traditional reverence for the academic niceties of subject-matter too often prevails over considerations based on the abilities, interests, and educational needs of the real boys and girls in our high schools. Recent moves for a comprehensive revaluation of subject-matter and methods in these schools hold promise of progress, but much backward-looking conservatism will have to be overcome before effective reorganization can be accomplished.

On the other hand, great concessions have been made to the changed character of the secondary school population. These adjustments have been in the way of additions rather than a fundamental reconsideration of functions and philosophy, but they have met, in a tolerable fashion, the most obvious and pressing demands for a service adapted to changed conditions. A wide variety of new courses have been introduced, dealing largely with practical and vocational subjects. Provisions for elective programs, within certain limits, permit adaptations for individual pupils. The value of these new subjects for the practical needs of the pupils is, unfortunately, often diminished and even imperiled by the tendency of teachers, in an effort to make their courses as respectable as the more aristocratic college preparatory group, to develop an increasingly formal and academic type of instruction.

Some beginning has also been made toward a form of service which should be a foremost function of the secondary school, namely, counseling and guidance. The term guidance is here used in its most comprehensive sense, and includes all those influences and opportunities designed to assist the pupil in discovering how he may make his social, vocational, cultural, and recreational choices and adjustments most successfully and happily. At its best it provides conditions in which the pupil, through appropriate experiences, comes to a clearer realization of his abilities and interests, and makes his own decisions accordingly, voluntarily seeking the readily available advice of counselors only on those points on which he feels a lack of adequate information. Such guidance is by enlightenment rather than by imposed judgments, and is continually open to revision as new light appears.

One of the most helpful developments as an administrative aid to effective guidance has been the general establishment of junior high schools. The strictly elementary education has thus been restricted to the first six grades, except in most rural areas and the less progressive cities where the junior high school movement has not yet found recognition. In this newer institution, free from traditions as to subject requirements and subject prestige, the curriculum easily becomes a series of guidance experiences. Opportunities for exploratory trials in various fields of learning; a generous range of activities in which to develop responsible participation, self-discovery, co-operation, and social adjustments; and broadly inclusive courses revealing the essential interrelationships among the major fields of knowledge rather than specialized diversifications; these are characteristic features of the junior high school and its significant contribution to the conception of secondary education as fundamentally a form of guidance enlightenment for the early years of adolescence.

Something of this same point of view should pervade secondary education throughout. The secondary school years should be a period of socialization, of attaining some understanding of the responsibilities of civilized society and of seeking to prepare for some worthy share in them. There should be a period of conscious self-appraisal, through trial and exploratory effort, looking toward the selection of attainable goals for intensive study. On such a basis of increasingly confident self-direction, there should be varied opportunities for specialization leading toward higher education, toward more immediate vocational activities, or toward chosen fields of culture and accomplishment. Until the work of secondary school pupils comes to be predominantly and progressively characterized by well-directed effort toward willingly and rationally-chosen goals, there will remain a fundamental faultiness in the organization which no exaltation or multiplication of subject-matter can remedy. Certainly no philosophy of secondary education is adequate which does not comprehend an organization of services, opportunities, and educational experiences, sufficiently diversified and sympathetically adapted for the individuals of our heterogeneous high school population, to approximate the attainment of such a goal of well-directed learning activities.

Higher education. Until the early decades of the present century the administrative problems of higher education seemed theoretically simple. College students were a strictly selected and a comparatively homogeneous group With occasional social and athletic exceptions, the students possessed more or less discernible intellectual and scholarly interests. They were for the most part aiming at successful achievement, either in some field of academic scholarship and culture, or in one of the more specialized professions. Certain less-academic departments, such as agriculture and engineering, had grudgingly been granted admission to the circle, it is true, especially in state-supported colleges and universities, but these modestly attempted to conform to the academic styles. The selection of a scholarly faculty and the maintenance of accepted academic standards were the chief administrative responsibilities, apart from the less dignified but lively task of securing funds for continued support.

By the time the first quarter of this century was passed, marked changes were apparent. Enormous increases in college enrollments were taking place, and the type began to be curiously mixed. Various influences contributed to this change. The World War had immensely emphasized the importance of technical training. Increasing preferment was being given to college graduates in many lines of employment and industry. The great permanent factor, however, was the growing throng of high-school graduates. It was inevitable that the great wave of growth and popularization which had lifted the secondary schools to new levels of prestige should reach the colleges and universities in at least modified force, bringing with it the same problems of a cosmopolitan population.

College and university authorities were disturbed by the unfamiliar characteristics of many of these newcomers. Many of the older, well-established institutions tried to keep the strain pure by restricting admission and selecting only the traditional type. Others which still felt kindly toward increased enrollments welcomed the recruits, but tried to make them conform to the customary pattern of studies and academic standards. The result was either wholesale student mortality or a compromise of traditional standards. The pressure for a more satisfactory solution was felt most keenly by the state universities, where dependence upon popular good-will made overstringent restrictions upon admission inadvisable. Perhaps the best statement of the problem and the obligations involved that has yet been put forth was voiced by Harry Woodburn Chase during his inaugural address when assuming the presidency of the University of Illinois in 1930. He described the new situation in the following words:

> The decade on which we are now entering is, in my judgment, critical for the state universities. Under the influence of the new social philosophy of America toward higher education, they are confronted by a definite choice.
>
> Either they must accept the challenge which the public interest in higher education has thrown to them, and do their utmost to deal with the vast and complex problem of popular higher education, or they will retreat from reality into an academic world that sighs for simpler problems and less varied tasks, that manifests impatience with all but superior students and traditional ideas, only to waken to the hard fact, when it is too late, that the public demand for higher education is strong enough to build up other types of institutions to meet its needs.
>
> If this is not to be the case, the state universities must recognize that they are facing a task not unlike that of the public high schools when, two or three generations ago, secondary education began to be a normal and accepted thing. In this generation, the state universities must unquestionably undergo radical transformation, as did the high schools under similar influence. I need not say that such a transformation should not be accompanied by any let-down in standards in so far as standards represent real achievement. But neither can we necessarily identify standards of work with the preservation of any traditional theory of what education ought to be and do. Our mission is to our own civilization, with its own needs and demands, not to the civilization served by the medieval university or even by those of Europe today.

In recent years earnest attention has been given by university authorities to methods of providing just and helpful educational service to these varied student groups without sacrificing the scholarly obligations and ideals of a true university. Among the experimental attempts at a solution of the problem, one of the most promising is the "General College" plan, as developed at the University of Minnesota.

This plan provides for a rather distinct group of courses, of the broadly comprehensive rather than the specialized type, affording a general education but not leading to research or to intensive mastery of a limited field of knowledge. Thus in segregated groups those students who are not preparing for professional careers are enabled to secure collegiate training along lines better suited to their purposes and ability, without disturbing the specialized scholarly pursuits which are peculiarly the province of the university. In some sections of the country the junior college is providing the general college type of service for a period of two years, but the problem is not likely to be solved until the same broadened facilities are generally available in the upper two years. The universities must not neglect the obligation to serve as centers of exacting research and as exponents of rigorous scholarship for the limited groups with superior talents for such intellectual leadership, but they must also recognize and co-operate with a program of more generalized or even popularized higher education for less selected groups from which will almost certainly come the predominant leadership for the majority elements in our democratic society.

Professional leadership. At all levels and in all types of educational organization there exists an administrative obligation to promote the best available professional leadership. The basic knowledge underlying educational practice does not remain static. Old data as well as new need continual interpretation. The schools themselves are, in the best sense, educational laboratories, and should be pervaded by an experimental spirit, alert to test and extend improved practices. The presence of such a spirit is inseparable from professional growth. The maintenance of the relationships and morale essential to such continuous advancement is a foremost responsibility of educational administrative organization.

It is highly desirable that much of this leadership be provided personally by those in administrative authority. Certainly a sympathetic friendliness toward professional growth should emanate unequivocally from positions of authority. On the other hand, there is distinct danger in the overconfident monopolization of leadership by a central authority, with its suggestion of assumed omniscience, often jealous of independent professional activities. Good organization will provide avenues through which contributions may come from any source, with assurance of recognition in proportion to their merit and usefulness. The best professional thought is not likely to be wholly concentrated in the central authority, and it is highly stimulating to general morale if opportunities for leadership in any special phase of educational progress are freely open to competence whenever it may exist in the staff. Such a democratic sharing of leadership naturally requires a corresponding plan of evaluation in order to protect the staff from impractical theorists and ambitious self-promoters. This defense can well be provided by a teachers' council, whose membership, drawn directly from the teaching staff, will probably be quickest to detect and reject insincerity or impracticality in proposals which they are to appraise before recommending them to the consideration of the general staff. In a sense, of course, the provision on the part of the administration for such avenues of expression and progress is very genuine leadership, but it is a form of it which best invites co-operation and develops latent leadership in others. There is no more certain mark of constructive administration than a fine professional morale among the teaching staff, with correspondingly continual vitality in their educational philosophy.

Incidental administrative duties. There are certain incidental duties connected with the task of building and maintaining an administrative organization in harmony with a sound philosophy of education. Some of these are implied in the special discussions of particular phases of educational practice contained in other chapters. They should be mentioned at this time to suggest their connection as elements in the total picture of an integrated school organization. One of the most important of these duties is the selection and placement of the teaching staff. The qualifications and training of the individual teacher are treated at length in a later chapter, but, even with an adequate supply of well-trained teachers available, the task of selecting and assigning individual teachers to the positions best adapted to their professional maturity and usefulness, as well as most likely to secure maximum benefits for the children, is one that tests an educational executive. The considerations involved demand an appreciative understanding of both psychological and social factors and influences. The same considerations apply with equal cogency to the closely related problems of supervision and promotions.

Other duties are those connected with the location of school units, the planning of appropriate physical facilities, the general program of schedules and activities for utilizing effectively the space and services available, a centralized and co-ordinated system for providing books and supplementary instructional materials, plans for constructing and revising courses of study, and similar responsibilities. Many of these are technical in their nature, but they must be constantly co-ordinated with the total program lest they become mechanical or regarded as ends in themselves. Therein lies the vital objection to any administrative separation of the business organization from the educational control of the system. All business and technical arrangements must find their justification in the light of their place in the educational program. That means their evaluation in accordance with an educational philosophy, and their subordination to the major objectives in an educational policy.

The schools and the public. The depression years of precarious support and frequently hostile criticism brought an awakened realization of the importance of interpreting the schools to the public. The experience was in many respects a salutary one for educational administration. The school system had grown rapidly, both in the number of individuals served and in the complexity of its organization. The public, busy with commercial enterprises and lively industrial developments, had taken the schools for granted and, as long as things in general were going well, gave a somewhat uncomprehending approval and uncritical support to the educational system. Educators, on their part, were too much engrossed with new problems to attempt elaborate explanations. Indeed, many developments were yet tentative and experimental, subject to further modification and not warranting premature announcements or publicity. The inevitable day when the public had both the time and the inclination to demand explanations and justification for modernized educational practices brought forth, under compulsion and in half-apologetic form, the information which should have had an earlier and more auspicious presentation. The value of this lesson should never be lost.

Schools exist for the enlightenment and improvement of society. Their work cannot be satisfactorily done without the co-operation of society — a co-operation which requires understanding and good-will. The relationship must be one of interested partnership between school administrators and the public, including immediately the parents and more generally all members of society. The modern recognition that the schools have such a vitally determining influence upon the political and social ideals of a people inevitably means either satisfied co-operation or ill-considered dictation by the public as to educational policies. Professional training is necessary, of course, for a comprehension of the technical phases of educational service, but there need be no greater air of mystery surrounding even such technical matters than belongs to similar professional activities of the engineer or the physician. In fact, the direct public interests involved justly call for a more complete understanding by society in general of the purpose and significance of educational practices than is true of any other profession. Accordingly a grudging or secretive attitude relative to educational activities is ordinarily indefensible.

Means of promoting public co-operation. When once the obligation of sharing with the public as complete an understanding of educational practices as possible is sincerely accepted as a sound principle of administrative philosophy, various avenues for such enlightenment will be found available. The most valuable one has developed during the past quarter century in the spread of the great Parent-Teacher Association movement. Many teachers and administrators at first regarded it with veiled suspicion, fearing that it would prove a meddlesome embarrassment. Such it would obviously have been, had the parent groups remained inadequately informed or without appropriate guidance in their eager efforts to share more fully in the formal education of their children. Two factors fortunately operated to correct this dangerous possibility. One was the admirably patient and modestly unobtrusive way in which the leaders among the organized parents offered their assistance and asked for advice regarding means of helpful co-operation. This attitude and policy invited confidence, and helped to overcome the tendency toward aloofness which seemed to afflict many teachers. At the same time, certain wise educators recognized the splendid possibilities in the movement and co-operated eagerly in the development of a well-planned program of activities and study for the organization to the end that their meetings should promote a more sympathetic understanding of educational problems, and that their energies should be devoted to undertakings helpful to the school and appropriate for accomplishment by such groups. This association of keenly interested partners with the school in the great business of education has untold possibilities of helpfulness in interpreting the work of the schools to the general public.

Another great opportunity for promoting better understanding lies in the profusion of service clubs which touch almost every community in the Nation. Their membership includes the influential masculine elements in the population much more fully than does the parent-teacher organization. School administrators are welcomed as members, and their weekly luncheon programs, devoted largely to matters of civic concern, are open on appropriate occasions to representatives of the schools for the purpose of bringing more intimate information as to educational matters. The personal confidence and good-will toward individual school administrators developed through the intimate acquaintanceship and associations in such clubs are perhaps as valuable as the formal presentation of educational facts, because a direct interest in a friend's professional problems is stimulated and voluntary efforts are made to assist in their understanding and solution.

The local newspapers offer another important channel for presenting educational information to the public. The fact must be faced that the press wants news, and does not limit its accounts to the favorable occurrences. Frankness and professional honesty during all interviews on school matters will go farthest toward winning the good-will of newsgatherers, while indications of evasion and secretiveness challenge their most persistent and ruthless determination to get the story, or at least *a* story. Unless the local press is controlled by special interests unfriendly to the schools, or its policy is dictated by partisan considerations, there will regularly be opportunity for helpful publicity; and a tactful administrator can accomplish much even under adverse circumstances. Interesting material prepared by pupils is usually welcomed, and may be made a regular feature if competent supervision assures uniform quality.

These suggested avenues of public information regarding the schools do not exhaust the possibilities, but are intended to be illustrative not only of methods but of desirable attitudes and policies as well. Our foremost interest throughout the discussions has been to emphasize the fact that in a democracy the schools belong to the people, that the schools must adapt themselves to public needs, and that a sound philosophy of administrative organization will accord high value to plans and facilities whereby the public may be drawn into a more friendly and understanding relationship with them. Present indications point to more extensive demands upon the schools in the future, and a correspondingly greater need for adequate support from the public. Such matters as the deferred employment of youth, and the growing demand for an expanded program of adult education, will present problems affecting the social obligations of the school as well as its financial relationships. The public which is to pass judgment on the policies involved has increasing need to be accurately informed regarding not only the present aims and achievements of education, but its social possibilities for the future as well. Education can go forward only as fast as the public is prepared to understand and approve its advances.

TOPICS FOR DISCUSSION

1. What distinctions between the purposes of the elementary and of the secondary school do you consider valid?
2. Discuss the feasibility of President Chase's program of widened university offerings and adaptations, in the light of its possible effects upon academic standards.
3. The implication is put forth that administrative organization sometimes becomes overelaborated into an end in itself. By what symptoms could one recognize such a development?

4. To what extent is a school administrator responsible for the educational philosophy of his teachers?
5. It has been said that a school administrator must bring about the continuous education of four groups of persons: the pupils, the teachers, the board of education, and the general community. Try to apportion his direct efforts, in terms of per cents, among these four functions, giving reasons for your judgment.
6. How do you account for the fact that the junior high school has received little favor in rural communities? What advantages could it offer to such communities?
7. What are the arguments for and against further extension of the junior college movement?
8. If your board of education had under consideration the establishment of research service for your local schools, what reasons would you give in recommending to them such a step?
9. School board members frequently use the analogy of the management of a factory in discussing school administration. What are the fundamental differences between the two?
10. Why has school publicity become so much more important than it was a generation ago?

SUGGESTED EXERCISES FOR STUDY AND DISCUSSION

1. List in the appropriate spaces below for *the school plant* as many suggestions as you can which would tend to provide good school conditions:

	Site	Building	Equipment and Supplies
Health and Safety			
Educational Program			
Economy and Efficiency			

2. Indicate the best response, and verify:

—— The type of administrative organization which provides the least favorable conditions for learning is the (1) city (2) county (3) district (4) town (5) township

—— The type of administrative organization which has led the way in providing the most favorable conditions for learning is the (1) city (2) county (3) district (4) town (5) township

—— The type of educational support which would tend to remove inequalities among children in regard to favorable conditions for learning is the (1) city (2) county (3) district (4) federal (5) state

—— The local school superintendent's most important function is (1) classification and grouping of pupils (2) formulation of educational policies and programs (3) furnishing professional leadership (4) measuring educational results (5) promoting community support and confidence (6) recognition of individual differences (7) selection, assignment, improvement, and supervision of staff

—— The local school board's most important function is (1) approving educational policies and programs (2) approving school budgets (3) fixing school tax rate (4) listening to complaints of parents (5) promoting school building programs (6) selecting the superintendent of schools (7) visiting schools

3. Indicate whether these statements are true or false (verify):

T. F. Good school conditions require state printing of textbooks.

T. F. The paying of school board members for their services would result in better school conditions.

T. F. Good school conditions require fiscal independence of school boards.

T. F. The same school conditions must be equally good or bad for all pupils concerned.

T. F. Good school conditions require delegated authority.

T. F. School administrative organization should never be considered as an end in itself.

T. F. School administration should be an integral part of an integrated educational program.

T. F. The basic training for free citizenship is provided by the elementary school.

T. F. The secondary school lags behind modern demands.

T. F. Higher education is being rapidly popularized.

T. F. Public confidence and co-operation must be included in school progress.

T. F. Educational practice naturally tends to be progressive.

T. F. Educational leadership must be more autocratic.

T. F. Schools must not be used as educational laboratories.

SELECTED REFERENCES FOR ADDITIONAL STUDY

Almack, J. C. (editor). *Modern School Administration.*

A collection of addresses by twelve educators on the purposes and responsibilities of modern school administration.

Almack, J. C., and Lang, A. R. *Problems of the Teaching Profession.* Chapters VI and VII.

Good statement regarding the relations of teaching and administration.

Cubberley, E. P. *Public School Administration.*

The standard text on the major problems of school administration. Chapter VII is recommended for its discussion of the modern scope of public education, and chapter XIX for its treatment of teacher-training.

Doughton, I. *Modern Public Education — Its Philosophy and Background.*

In chapters XII and XIII are discussed state support and control of schools and the practice of democracy in the public schools.

Douglass, A. A. *The American School System.*

Interesting analysis, from the modern point of view, of the functions and organization of our school system.

Graves, Frank P. *The Administration of American Education.* Chapters VIII, IX, X, and XVIII.

Comments on personnel problems by a great administrator.

Kuehner, Q. A. *A Philosophy of Education.*

Chapter XVIII gives selected quotations on educational organization, administration, and support.

Moehlman, A. B. *Public School Relations.*

A very helpful account of various effective means of interpreting the schools to the public.

Strayer, G. D., Engelhardt, N. L., and others. *Problems in Educational Administration.*

The final section, pp. 683–748, is suggested for problems of personnel relations.

Weber, O. F. *Problems in Public School Administration.*

Chapters III and IV are recommended for discussion of an administrator's philosophy of education and his relations to the board of education.

CHAPTER XIII

THE TEACHER

THE teacher is the nucleus around which our whole discussion in its practical application must be gathered. All that has been said in the preceding chapters of this book converges into the position of the teacher as the chief educational agency. The point from which the succeeding chapters take their source is the teacher at work. It is the teacher then about whom the whole educational system in its practical application rotates. In this viewpoint the authors are not forgetting that the pupil is the all important factor in the educational process and our ultimate concern. On the contrary, it is this very recognition that makes the teacher now our principal point of concentration and of reference. Since the applied side of the entire discussion is centered around and related to the activities of the teacher, it is imperative that our philosophy of education include a clear concept of the teacher and the functions belonging to that important office.

We have accepted the general definition of education as a method of adjustment to environment. Our previous discussions of the biological and psychological properties of man whereby his superior adjustments are possible, of the social group by which education is made necessary, and of man's past struggles and achievements in adjusting himself to his environment are pertinent only to the degree that they have a fundamental bearing upon the work of the teacher. The relationship between educational theory and practice may be either direct or indirect, obvious or latent, but some connection with the work of the teacher must be there. The teacher standing upon the structural foundations of education, which have been laid in preceding chapters, has a twofold position in the superstructure of the teaching process. In the first place, as a person, the teacher is a definite and important part of the pupil's environment, and, in the second place, as an educator, the teacher is a manipulator of that environment for the benefit of the pupil. This double concept is significant in properly evaluating the teacher in one's philosophy of education.

The teacher as part of the environment. The predominant part of the total school environment is the teacher as a human being. Just as a person, he is a vital factor in the school situation and his own reactions to surrounding conditions serve as influential patterns for pupil imitation. It is the great teacher, and not the massive buildings and expensive equipment, that makes a noted school. The material aids and conveniences, which are too often more easily and readily obtained than superior teachers, are of secondary importance and can at best but facilitate the teacher's work and can in no way substitute for it. An old log is sufficient for a great school provided a great inspiring teacher like Mark Hopkins is on one end of it, and a great impressionable pupil like Garfield is on the other. The greatest teachers of all time, from Socrates on down, were great not because of the materials with which they had to work — often they had very little — but rather because of what they were as individuals. It is the exemplar of an educated person that the teacher is, it is the stimulation and inspiration which he generates, it is the personality that he radiates, it is the person that is back of the teacher, which make him the great formative force.

This is not to be construed as meaning that the teacher is to be considered an exhibit or display for inspection, a model representation of all the desirable things, nor a flawless and faultless pattern for conscious imitation, but rather to stress the idea that the teacher is a real and vital part of the school environment, who teaches by example as well as by precept, and that what he *is* counts along with what he says and does. The direct personal contact of pupils with teacher is so momentous that only such persons as have desirable physical, mental, and social traits, or are able to acquire them, should be allowed by society to assume the potent office of teaching and become an intimate and important part of the pupil's formative environment. It is the teacher, as a person, who energizes the school environment and stimulates the physical, mental, emotional, and social responses of the pupils. To do this effectively, the teacher himself must be a normally appearing and functioning human being, possessing abundant health and a liberal share of those biological traits from which emanate physical and mental vigor and a commanding presence. He should possess also the social and philosophical attitudes, appreciations, ideals, and principles, with which it is considered desirable to have the youth of the land instilled. These traits are communicable by contact mainly and, if caught, it must be through favorable exposure to some person who has them.

Physical and mental fitness. There are two main considerations involved in the physical and mental fitness of the teacher for his work. The one is concerned mainly with the nature of the work itself. Teaching was once thought to be an easy type of vocation, especially appropriate for persons who were physically unable to succeed at anything else. The fact is that teaching is a most difficult kind of work, requiring a large amount of physical endurance and mental calm. Only those persons who possess good health and a sound physique can satisfactorily meet the arduous demands made upon teachers. The physically and mentally unfit will have a discontented and unhappy existence as teachers, will worry much over their work, and may break under the strain and tension of the classroom. The teacher who is regularly, or frequently, absent from school on account of illness, certainly cannot do the most effective work. Whether the class is dismissed or taught by a substitute, there is a loss to the pupil morale and progress. The teacher whose voice is unpleasant, who cannot see well, or who has difficulty in hearing, is not physically fit for a first-class job of teaching and should not be cluttering up the pupil's environment with confusion and disorder. The person who is physically unable to participate in the playground activities of pupils, to get about the room and up-and-down stairs with facility, is greatly handicapped in the work of teaching where that type of activity is necessary. Then, too, the teacher has more than average need for abundant optimism to meet discouraging situations and for a good sense of humor and of proportion to relieve tensions, misunderstandings, and annoyances which will surely emerge at some time or other out of dealings with pupils, parents, and patrons. The teacher's position and responsibility in the school require the greatest of tact, fairness, adaptability, sincerity, good nature, courage, and genuine interest and faith in young people. The physical and mental fitness indicated above is essential to a satisfactory performance of the ordinary duties of teaching.

The second consideration involved in the physical and mental fitness of the teacher grows out of the close personal contact between teacher and pupil, and from the general observation that persons tend to become like those with whom they are constantly thrown and are intimately associated. This becomes especially true because of the teacher's dominant position in the school environment and the pupil's impressionable status. These conditions make it doubly important that the teacher possess those physical and mental traits (nervous and emotional) which are desirable for the pupil to acquire. Those fitnesses, already mentioned in the preceding paragraph as prerequisites to the teaching function itself, have a bearing here also. Fortunate is the pupil who has a physically attractive, mentally alert, vivacious, forceful, emotionally stable, and a well-groomed teacher, cheerfully and hopefully encouraging him in his school activities; a teacher whom he can look at, admire, and hope to be somewhat like sometime. He is fortunate because of what he is able to accomplish under these happy and inspiring circumstances, but especially because of the formative pattern and stimulation that is provided for his own physical fitness and personality. The teacher who has a repulsive physical defect will probably have a depressing effect upon young people, and should not become a constant part of the school environment. There is grave danger that pupils will tend to imitate a teacher who has speech defects or facial tics. It is well known that the teacher who is cranky, irritable, and a trouble-maker on account of mental or emotional instability, is more than likely to have an unhappy and disorderly group of pupils. An abundance of radiating health and of physical and mental well-being are more important in teaching than in any other vocation. This is due both to the nature of the work and to the close contact with young people.

Social and philosophical stability. The foregoing has had to do mainly with biological and psychological characteristics. A person might have all the desirable physical and mental traits and still be unfit to teach. In fact their possession, if he were socially and philosophically instable, would tend to make him even the more unsuitable for teaching because of the positive influence of his attractive personality. A forceful person is potentially as great a menace as a benefactor to society. As a part of the school environment the teacher's philosophy of life and his social views and conduct are of utmost concern. He needs to be a person of the highest type of citizenship, irreproachable in character, discreet, broad in social-mindedness, and sound in his philosophy of life. It should be his firm conviction that children are the greatest national asset and concern, that education is the Nation's greatest investment and insurance, and that service to others provides the greatest good and satisfaction.

Along with this the teacher needs his full share of good, sound, ordinary common sense. An incentive to this is an earnest and co-operative participation in life affairs outside the school, a wide association with persons of varying interests and viewpoints, and a fund of useful civic knowledge and experience in activities normal to adulthood. The teacher should be acutely sensitive and responsive to the stimulations of the social group of which he is a part, and should be able to maintain a sympathetically tolerant attitude toward the opinions, beliefs, practices, and conduct of the conservative, the creative, and their variant elements in society. He should quickly detect half-truths, errors, and prejudices, and not be led astray by fads, fantastic doctrines and systems, and *isms* in any department of life and of education, and should guard against becoming visionary and being carried away by quixotic enthusiasms and theories. He should hold group security and co-operative activity in high regard, and should have a genuine appreciation for the social heritage of cumulated experience and of social institutions. He should maintain sane views regarding the place, purpose, and function in society of the family, economic organization, church, political state, and school, and should look upon the problems involved in them with an open-minded, progressive, and scientific attitude. He should not only be physically able to stand on both feet, but he should philosophically keep both feet planted firmly on the ground; he should not only be able to look one straight in the eye, he should socially face facts and gauge his vision by reality. The teacher's social attitudes, appreciations, and habits, and his philosophical bearings and balance, are all of tremendous importance in the pupil's environment. These facts should never be overlooked. The teacher is not just scenery, but is a person playing a dominant part in the social environment of youth.

The teacher as a manipulator of environment. It is as a manipulator of environment that the teacher's function as an educator appears. When it is recognized that in the learning process the individual pupil is the active agent, and the environment is a passive and inert factor but potentially powerful and unlimited in stimulation and motivation, the teacher's duty as a manipulator of this environment takes on utmost significance. It is the teacher's responsibility to select and arrange the school environment in such a manner that there will be present the most advantageous conditions, influences, and incentives for educational activity on the part of the pupil. No more is possible of the teacher as an educator than to incite, control, and guide the learning process indirectly by a subtle and skillful management of stimuli for each pupil's reactions. In this way only can there be acquired the kind of education which society has found most necessary for its own safety and advancement, and best for the individual pupil's welfare and happiness.

The selection of situations and materials of instruction which are of special excellence for school purposes involves a consideration of their relative usefulness, their lack of adequate attention elsewhere, and their probable contribution to the improvement of society. To the end that the school surroundings may be more ideal, genuine, and proper than some of the world outside, the pernicious, harmful, and noxious elements are with rigid insistence excluded. The danger in this of making the school life too artificial, and too different from life outside, must be recognized and guarded against. Then, too, the problems of the school are to be kept within the capacity and the interest of the individual pupil, and at a sufficiently simple level for him to understand them and succeed in their solution. Right here, unless due care is taken, there is grave danger of building up in the pupil habits of failure instead of habits of success, and thereby disqualifying him to cope with the demands of adult life. Also as the pupil progresses in achievement the surroundings are to be made gradually more and more complicated until, as an adult, he will not be confused and discouraged when meeting the problems which the world will have for him. Furthermore, by expanding the school environment through the aid of such equipment as maps and books, the pupil is enabled to rise above provincialism and range over the whole gamut of recorded time and known places. This, according to John Dewey, is the advantage of the school environment over chance environment — the providing of simplified, graduated, purified, and broadened surroundings. Success in creating and manipulating these distinctive school conditions depends in the main upon the academic and professional preparation of the teacher as an educator.

Academic preparation. From the foregoing it would appear obvious that the teacher, both as a person and as an educator, should most of all professional people be well-educated and cultured. A liberal education enhances the whole personality and inspires confidence and respect. The teacher's knowledge and training should clearly exhibit to the pupil, for his own possible attainment, the characteristic scholarship and refinement of learned persons. For the educator, subject-matter training is of course fundamental to the whole teaching process. The teacher must be well-informed in the common or statutory school subjects which he teaches, and a master of correctly spoken and written English. He should be conspicuously proficient in some one field of knowledge, or in some skill, which he teaches and for which he has a special talent and interest. As a basic part of his vocational equipment, he should have a comprehensive or survey grasp of the classified fields of knowledge outlined on page 146. The effective teacher, then, needs a broad understanding of the great range of accumulated experience and intensive preparation in the subjects in which he instructs. It is necessary for the teacher to know, and to be conversant with, far more than he teaches.

It should be pointed out here that it is quite possible for a seemingly well-informed person to be an uninteresting, wordy, and tedious bore. While personality can have much to do with this condition, it is also a matter of the kind of academic training possessed. There is always the danger that the academic preparation obtained from books, and in more or less isolation from the activities of the world, may tend to be of a verbalistic and overlogical type. Textbook knowledge of this kind can easily be rather useless and dull, and more concerned with words than with the ideas to be conveyed by them. It is especially easy for the teacher to have just this type of training, and he should therefore make a strenuous effort to avoid verbalism and to make his knowledge of a practical and functional sort, well humanized and popularized, and fresh. His knowledge should be centered upon distinctive human interests, made easy to understand and use, and adapted to those with whom it is being shared. Much of the superficiality and pedantry in learning can be avoided by making it the practice to put the information in use as much as possible, by seeking an abundance of conversation and social intercourse with other adult minds, by preparing public utterances on vital subjects, by traveling to foreign and unfamiliar places for new and more accurate knowledge and experiences, by purposeful reading of important books, by giving some time to motivated study, and by the teaching itself when accompanied with the right kind of daily preparation. The teacher, along with his literary scholarship, should have much personal knowledge gleaned from his actual experience of living and from his first-hand contacts with reality.

Professional preparation. The professional preparation has to do with the more strictly technical and procedural aspects of teaching in distinction from the purely scholarly phase. There was a time when the whole of teacher training consisted of academic training, and, while there were some famous teachers in those days, most of them were groping fumblers. The need for the teacher to be a good academic student cannot be overstressed, but he must have in addition to this much special knowledge and skill appropriate for guiding, instructing, and advising pupils. By this all teachers are made, and born teachers are made better. For the teacher there is wide over-lapping between the academic and the professional, and practically all that has just been written about the former applies almost equally well to the latter. Teaching procedures cannot exist apart from the subject-matter concerned. Their separation is purely arbitrary, and for the purpose of consideration and emphasis. Professional preparation should include special training in the elements at least of school organization and administration, methods of teaching and supervision, understanding individual differences among pupils, classroom organization and control, and the selection of subject-matter. All of these matters are so involved in the proper manipulation of the school environment, and are so important for the teacher as an educator, that they are discussed in some detail in other chapters of this book. Unless school procedures conform with the way individuals naturally learn, they will hinder rather than help, and learning will be in spite of rather than because of the teacher's efforts.

In some respects professional training requires more careful and constant attention than does subject-matter training. It is likely to become obsolete sooner. Teaching is a progressive profession, and much is continually being discovered about its processes and procedures. It provides a fertile field for isms and panaceas. The history of education, modern books, and magazines reveal many fanciful plans, incapable of realization. The teacher should be prepared to distinguish between the true and the false, and the sound and the unsound in modern educational movements. For another thing, the teacher can as easily become a pedant in educational as in academic matters. He constantly faces the danger of becoming absorbed with book learning, of overrating mere professional knowledge and investigation, and of lacking the ability, judgment, or inclination to make proper and beneficial use of this knowledge. A function of educational theory is to make practice more intelligent. It is the purpose of professional preparation to provide the teacher with the science and art of manipulating the school environment in such a manner that the pupil's maximum possibilities will be attained.

Evolution of teacher training. An adequate concept of the teaching function requires some knowledge and appreciation of its development. The first formal education and its complement, the teaching function, reach far back into antiquity. Man's superior aptitude for learning and his accumulation of experiences gradually complicated his simple primitive conditions of living. The ever-widening gulf between natural surroundings and the man-made environment demanded that the older members of each generation take increasingly more time to assist the youth in adjusting themselves to the many artificial and difficult situations. This necessity eventually led to the adoption of a policy by which certain of the most able persons were relieved from the usual livelihood activities in order that they might devote themselves exclusively to the instruction of the youth. In this manner the function of teaching as a special vocational activity evolved.

Specific training of teachers for their work in the sense we understand it today did not emerge until the nineteenth century. Up to that time the idea of teacher preparation was to have a modicum of knowledge and some little skill in instruction. Despite some earlier beginnings, it was not until the psychological movement of the nineteenth century and the great work of Pestalozzi, Herbart, and Froebel, that the *child* rather than the *subject* became the center of the pedagogical process and a real instructional theory and a teaching technique developed. The remarkable work of Pestalozzi led in 1809 to the establishment of the Prussian normal school system, which thirty years later became the pattern from which Massachusetts created the first state normal school in America.

Social significance of teaching. The social significance of teaching has already been indicated. The development of teacher-training institutions has been in response to the social need and public demand for well-trained teachers. By far too many persons accept these preparation facilities mainly as a personal opportunity for vocational training by which they can earn a living, and without realizing the potential importance of the teacher in terms of social service. Except for the influence of teaching as a social function the teacher-training developments mentioned above would never have occurred. That education lies at the very foundation of our government has been recognized from the very beginning in the utterances and writings of our great national statesmen — Washington, John Adams, Jefferson, Madison, DeWitt Clinton, Webster, John Jay, Lincoln, and others. Education must have its full share of the most capable and promising young people of each generation. It is through education that the other great professions, the specialization of vocations, the advantages of modern society, and the contribution of geniuses have been made possible. The fact that all that stands between the most primitive savage and the most highly cultured man is education will bear repeating here.

In modern society the office of teaching has become a stupendous social institution. Through the long series of discoveries, inventions, and innovations in all fields of human endeavor there has been created an intricately complex and dynamic world, the magnitude and like of which baffles comprehension. A list of the social and material changes which have taken place in the brief space of the past twenty-five years, yes even the past five years, would be amazingly long. The gulf between the infant and the adult life of today has become so wide and perplexing that the child, in order to live successfully in the modern world, requires many years under the expert guidance of many trained teachers. In the United States nearly a million teachers are needed to conduct the thirty million pupils through their school studies. The social significance of teaching is so great that society dare not neglect or slight it, even temporarily. Now in the following chapters let us consider some of its procedures more carefully.

TOPICS FOR DISCUSSION

1. Discuss the relative importance of the interests of the teachers and those of the pupils in the matter of teacher-tenure.
2. Dewey, in *How We Think*, says: "Teachers — and this holds especially of the stronger and better teachers — tend to rely upon their personal strong points to hold a child to their work, and thereby to substitute their personal influence for that of subject-matter as a motive for study.... In this way the teacher's personality may become a source of personal dependence and weakness, an influence that renders the pupil indifferent to the value of the subject for its own sake." How can this warning be reconciled with the usual demand that the teacher possess a vigorous and dynamic personality?
3. What standards should be set up for admission to teacher-training so as to ensure a satisfactory teaching personnel?
4. How do you account for the delayed social recognition accorded to the teacher and to the importance of teaching service?
5. What justification is there, in your philosophy of education, for barring married women from employment as teachers?
6. During recent years there has been a marked increase in the number of young men training for teaching. Discuss the causes and probable results of this tendency.
7. To what extent can one's personality be improved through studies and experiences? Suggest ways in which a teacher-training program might be planned to accomplish such improvement.
8. List what you regard as the three most important characteristics of a truly professional attitude in teaching, and show the relationship of each to growth and improvement in service.
9. To what extent are college students influenced in their selection of courses by the personality of instructors? Is such influence

justifiable, when measured by the student's own reactions and progress?

o. Give examples from your own experience to show how the personality of the teacher may be the determining factor, for better or worse, in a learning situation.

SUGGESTED EXERCISES FOR STUDY AND DISCUSSION

1. Match:

—— E. F. Benson	(1) *A Schoolmaster of the Great City*
—— Edward Eggleston	(2) *Emmy Lou*
—— Jessie Field	(3) *Jean Mitchell's School*
—— G. M. Martin	(4) *Rebecca of Sunnybrook Farm*
—— Angelo Patri	(5) *The Brown Mouse*
—— Herbert Quick	(6) *The Corn Lady*
—— W. M. Smith	(7) *The Evolution of Dodd*
—— H. G. Wells	(8) *The Story of a Great Schoolmaster*
—— Kate D. Wiggin	(9) *David Blaize*
—— Angelina Wray	(10) *The Hoosier Schoolmaster*

2. Select the best response:

—— The best way to avoid an oversupply of certificated teachers would be by (1) raising scholarship standards (2) reducing salaries (3) extending amount of training necessary (4) making tenure more insecure (5) more careful pre-training selection (6) eliminating married teachers (7) eliminating home talent teachers

—— The most commonly used index of teacher preparation is (1) nature of professional course (2) scholarship standing (3) personality development (4) quality of practice teaching (5) number of years of college work

—— The responsibility for well-trained teachers should rest primarily upon (1) teacher training institutions (2) certificating authorities (3) employing officials (4) public opinion (5) supervisors

—— It is probably best to have teachers certified by the (1) federal government (2) county superintendent (3) local school board (4) state teachers' association (5) state department of education

—— Teacher training candidates should be selected without reference to (1) general health (2) high school course (3) mental capacity (4) neurotic tendencies (5) physical defects (6) speech defects (7) scholastic ability (8) teaching personality (9) cultural background (10) habits of study (11) scholastic interests and attitudes (12) professional interest

3. Indicate whether these statements are true or false (verify):

T. F. The primary obligation of teacher training institutions is to the individual teacher.
T. F. The general quality of candidates for teacher training should be improved.
T. F. Teaching is now a sufficiently attractive profession.
T. F. Professional training and professional education mean different things.
T. F. Marriage should disqualify a woman for teaching.
T. F. Grade and high school teachers need different kinds of training.
T. F. Teacher training graduates are a finished product.
T. F. A teacher's credential should designate the grades or subjects the holder is qualified to teach.
T. F. A well-trained teacher has better chances of employment than a long experienced one.
T. F. In service training is imperative for teachers.
T. F. Teachers should expect their work to be appreciated fully by the public.
T. F. The work of the teacher is growing relatively less significant.
T. F. The older generation understands the work of the school better than the younger generation.
T. F. There is an oversupply of adequately trained teachers.
T. F. Placement facilities are out of place in teacher training institutions on account of their commercialistic features.
T. F. The largest personal satisfaction comes to those who are best prepared for their work.
T. F. Teachers are potentially able to make the future what they wish.
T. F. Teachers were once trained by the method of apprenticeship.
T. F. Indefinite and permanent tenure are the same thing.
T. F. Teacher training guidance should begin in the high school.

SELECTED REFERENCES FOR ADDITIONAL STUDY

Almack, J. C., and Lang, A. R. *The Beginning Teacher.*

Personal considerations preliminary to teaching are discussed on pages 3-57.

Almack, J. C., and Lang, A. R. *Problems of the Teaching Profession.*

Deals with the personal and professional problems the teacher will meet in the profession.

THE TEACHER

Avent, J. E. *The Excellent Teacher.*

Contains the composite judgments of 1002 teachers as to what the excellent teacher is. This is noteworthy in that the standards are set by teachers themselves.

Brubacher, A. R. *Teaching Profession and Practice.*

Gives a good concept of teaching and its practical problems.

Cooke, D. H. *Problems of the Teaching Personnel.*

A good discussion of the professional and administrative problems related to teaching. It includes good bibliographies.

Doughton, I. *Modern Public Education — Its Philosophy and Background.*

See chapter xiv for a discussion of teachers in the schools of a democracy.

Horne, H. H. *The Teacher as Artist.*

An old but inspiring little book.

Jordan, R. H. *Education as a Life Work.*

A well-conducted introduction into the field of education.

Kuehner, Q. A. *A Philosophy of Education.*

Chapter xvii gives selected quotations on the role of the teacher.

Lewis, E. E. *Personnel Problems of the Teaching Staff.*

This is a study of some of the outstanding personnel problems that arise in the administration and supervision of a public school system.

Manson, M. S. *Parents and Teachers.*

A good survey of organized co-operation of home, school, and community.

National Society of College Teachers of Education. *Yearbook Number* 23. (1935.)

This volume is devoted to the education of teachers and presents many guiding principles in teacher training.

Palmer, G. H. *The Ideal Teacher;* and *The Teacher's Philosophy.*

Two little classics, each well worth reading.

Pulliam, R. *Extra-Instructional Activities of the Teacher.*

A good statement of the responsibilities beyond classroom instruction which the teacher may expect to have.

Reese, W. P. *Personality and Success in Teaching.*

An interesting discussion of the importance of the factor of personality in teaching. Has good reference lists.

Thomas, F. W. *Principles and Technique of Teaching.*

The opportunities and responsibilities of the teacher are discussed on pages 3–12, and the personality and personal factors in teaching on pages 386–401.

Valentine, P. F. *The Art of the Teacher.*
A series of stimulating essays on teaching as an art.
Walsh, J. W. *Teaching as a Profession.*
The ethical standards involved in the teaching profession are presented. Good bibliographies are given.

See Cubberley's *An Introduction to the Study of Education and to Teaching*, and other books of that nature for further discussions of the work and training of the teacher.

CHAPTER XIV

METHODS OF TEACHING AND SUPERVISION

The basis of good teaching. The whole function of teaching is to promote desirable learning. Moreover, we found in an earlier discussion that learning is essentially an inner adjustment whereby the learner, prompted by impelling urges and interests, reaches some satisfactory relationship with the situation confronting him. This adjustment may involve control or compromise, depending upon circumstances, but out of the experience the individual has acquired certain knowledge, certain response tendencies which through repetition may become habitual, and certain attitudes toward provocative elements in the experience, characterized by shades of feeling which may range from mild enjoyment or annoyance to intense emotion.

These alterations in knowledge, habitual conduct, and attitude, remaining with the individual as a result of his responses to successive experiences, constitute learning. Purposive teaching seeks to control all possible phases of a learning experience in order that the outcomes may be as desirable and valuable as external direction can make them. The basis of good teaching must lie, then, in an understanding and guidance of the inner responses from which learning outcomes are derived. In short, methods of teaching must find their basis in psychological principles and must correspond, in a reciprocal way, to the normal types of mental response through which learning regularly is achieved.

Much learning takes place, of course, quite independent of deliberate teaching. Some of this undirected learning is highly effective, some is wasteful or ineffective, some is futile or even vicious. Just as the gardener, unwilling to let nature run riot even though choice blossoms may occasionally result in that way, must nevertheless find the key to control in the laws of nature herself as he eliminates hindrances and provides conditions favorable for healthy growth toward selected ends, so the teacher must take cues and guidance from the normal processes by which the best outcomes of learning develop. There are, to be sure, sharp conflicts in points of view and procedure between sincere and intelligent groups of teachers relative to preferred "methods" in teaching, but these are due primarily to divergent emphasis and the relative importance accorded to various elements in the learning experience.

Essential phases of the learning process. In the chapter dealing with the psychological principles basic to education, attention was called to certain necessary elements in the total activity of a learning experience. In order to comprehend the different points of view as to teaching methods, and the issues which arise from them, it will be necessary to recall, in brief summary, some of the facts mentioned in that discussion.

When an individual is confronted with a situation which provokes a definite response, he reacts with a more or less conscious purpose to enjoy, to understand, to control, to conform to, or to modify the situation in agreement with his desires. Only through such response and inner adjustment can learning, or permanent modification of behavior, occur. The vigor and, to a certain extent, the nature of the response will depend upon the interests of the person, arising as they do from native urges, more or less modified by previous experience. Unless the situation arouses such interests toward either positive or defensive activity, indifference precludes any effective reaction. Moreover, the character of the response will be influenced fundamentally by the predominant purpose and objects of conscious concern on the part of the individual at that moment, the "mind-set" emphasized by the Gestaltists and other groups of functional psychologists. Such set or purpose will strongly affect the interpretation as well as the attention and emotional response given to the situation.

Viewed from the standpoint of types of outcome or resultant mental products, every learning experience has three phases. One arises from the tendency to derive meaning from the experience, to perceive facts and relationships, and to acquire added knowledge. Another is the inclination to repeat or to avoid the same manner of reacting to the situation, if similar occasions recur — that is, the incipient beginning or strengthening of a habit. The third phase is the emotional fringe, the pale or vivid tone of feeling which accompanies the experience, and which remains as a more or less potent association with the predominant elements in the experience. All three phases of learning are present in some degree in every vital experience, and all may compete for pre-eminence. One's first music lesson, the opening of the first bank account, or learning to drive an automobile are typical experiences in which the reader will probably recall the lively intermingling of new information and the efforts to acquire specific and habitual procedures, with waves of emotion swaying and blending the entire adventure. More often, however, one phase is dominant, and may deliberately be made so by careful planning and direction designed to concentrate emphasis upon a particular outcome.

Their relative emphasis. From the foregoing it may be seen that there are various segments of the learning process upon which teaching methods may place relatively concentrated emphasis, both in the preliminary planning and in the actual direction of the pupil's activities during a period of instruction. Materials and equipment may be selected and arranged to furnish situations well calculated to challenge the learner's efforts, to anticipate and control his probable line of response, or even to provoke a desired emotional state. The organization of classroom activities may be designed to promote maximum initiative and self-direction for individuals or groups in the faith that abundant mental activity and self-expression are essential to learning, or it may retain dominant direction on the part of the teacher, in the conviction that some repression is more than offset by the stricter attention to the important business of mastering the prescribed subject-matter. Interest may be regarded as of foremost importance, indispensable to real effort and learning activity, and even furnishing a trustworthy guide to the selection of materials, making other claims of subject-matter subordinate; or, interest may be considered as merely a desirable adjunct to school work, to be stimulated and utilized, when available, for promoting study, or at least palliating the disagreeable duties of lesson-mastery, but never at the expense of disregarding orderly sequence in the course of study.

Various simple or elaborate plans may be devised for securing a favorable emotional set at the beginning of a learning experience, or prompting the recall of appropriate facts essential to the interpretation of new material — a procedure which may consume a considerable part of the instructional period, depending upon whether the teacher regards it as vital to good results or as encroaching upon time needed for "covering" the assigned lesson. Wide opportunity exists for varying emphasis on the different types of educational outcomes, with a corresponding temptation to stress unduly one's favored items. One teacher may delight in the mastery of facts, whether in mathematics or literature, vaguely assuming that appropriate skill or appreciation will somehow follow; another drills assiduously for skill and perfection in mechanical details, with serene faith that intelligent applications and a sense of values will surely distinguish the trained performers;

a third strives to be constantly inspirational, and, in trying to hold the heights, sometimes confuses sentimentality with appreciation and has inadequate time to develop clarity and accuracy. Difficult indeed is the task of keeping in true proportions and unity these essential outcomes.

The individual teacher's beliefs as to the proper focus of emphasis among the factors and steps expressed or implied in the preceding paragraph, along with the relative degrees of importance assigned to each item, will determine his philosophy of teaching. Upon this question, of major and minor importance, are divided also the distinctive modern schools of educational method. As we approach an analysis of the issues underlying the chief point of disagreement among the major schools of thought relative to teaching practices, it is well to remind the reader that the policy attempted throughout this volume has been not to dictate any part of one's individual educational philosophy, but to set forth the principles and materials to which thoughtful consideration must be given by every teacher before an intelligent individual philosophy can be formulated.

The "progressive" viewpoint as to methods. Educational practice tends always to become formalized. As soon as an innovation, originated by reformers as a protest against fixed traditional methods, becomes accepted, it in turn is likely to develop standardized and formal features. Consequently, most educators agree that constant revision and improvement in educational practices are necessary. During the past decade there has been an increasing number of educators who have expressed vigorous dissatisfaction at the tardy rate of such changes, and have advocated radical revisions of educational procedures. These constitute, in the main, a fairly homogeneous group which uses the term "Progressive Education" to designate the philosophy and practices which it advocates. In the writings of this group there occur frequently such phrases as informality, freedom, encouragement of creative expression, rights of the child as a free personality, life situations, and the fundamental importance of the interest of the learner. The following excerpts from an article by Burton P. Fowler, then president of the Progressive Education Association, published in the January, 1932, issue of the *Progressive Education Magazine*, undertakes to set forth some distinguishing marks of the practices approved by the group.

> They are not progressive unless in the actual classroom procedure, in the face-to-face relationships of teacher and pupils and among the pupils, there is evidence that an actively self-directed learning situation is the goal of the teacher's leadership . . . a type of teaching that guides but does not dominate . . . teachers who actually see education as child development, and who will never lose sight of the fact that the process of learning is usually more important than the subject to be learned.

The most comprehensive and sympathetic appraisal of the principles and practices of these Progressive Schools was presented in 1928 by Rugg and Shumaker. A typical characterization appears in the following quotation from their book:

> Freedom, not restraint.
>
> Pupil initiative, not teacher initiative.
>
> The active, not the passive, school.
>
> There is a fourth new article of faith — child interest as the orienting center of the school program.
>
> In the formal schools, even in those of today, the program of the child's education is organized about school subjects. Not so in the new schools. We find a new educational vocabulary exponential of a unique educative program. Compare the schedules of the new and the old schools. What a difference! The logically arranged subjects of the past — reading, writing, arithmetic, spelling, geography, history — are replaced by projects, units of work, creative work periods,

> industrial arts, creative music, story hour, informal group conferences, and other vastly intriguing enterprises.
>
> This curriculum does not look well on paper. It is a chaos of irregular time allotments. School principals might have a difficult time trying to fit the orderly movement of a large school into it. But it does give promise of active learning.[1]

The conservative viewpoint. In opposition to the claims and practices of the Progressive advocates, many prominent leaders in education have been sharply critical of the movement. Bagley has condemned its easygoing tendencies and has urged the maintenance of a mental discipline which prepares one to meet steadfastly the unpleasant but inevitable duties of life, which come in spite of one's interests and preferences. Snedden charges the group with disregarding permanent social values in the choice of materials, and insists that the foundation for well-informed citizenship cannot be trusted to haphazard and superficial childish interests. Freeman chides the Progressives for their reluctance to submit their results to scientific measurement, and challenges their claims of intangible and theoretical values. Practical school administrators, while often conceding the success of these methods under favorable experimental conditions and with superior teachers, are usually inclined to question their practicability under the average limitations of facilities and personnel found in the public schools.

The common fundamental principles of method. In the foregoing discussion there has been the constant implication that the major disagreements regarding methods of teaching have been essentially matters of divergent emphasis and opposing beliefs as to relative values. All thoughtful educators are agreed that certain fundamental principles underlie all learning, wherever it may occur, and that responsible teaching must correspond to these, keeping in mind also the social obligations which education must fulfill. The dominant importance of interest in directing and sustaining attention, the influence of readiness and mental set in controlling the nature of response, the psychological laws of learning, and, especially, the characteristic processes by which each type of learning occurs — these are all basic factors which determine the results of a learning experience, whether in school or out. The limits within which variation in teaching methods is reasonably possible are restricted to the planned control of the elements making up the situation confronting the learner, and to such suggestions and direction as may be injected during the learning experience. A brief consideration of the major types of learning activity will reveal the relationship between teaching and principles of learning — a relationship which must be comprehended in any sound philosophy of teaching.

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[1] Rugg, Harold, and Shumaker, Ann. *The Child-Centered School*, p. 60. Copyright, 1928, by World Book Company, Yonkers-on-Hudson, New York.

Adapting methods to types of learning. Attention has already been called to the three essential types of outcomes or results of various learning experiences; namely, skills, knowledge, and attitudes. Each is dependent upon a corresponding phase of the mental response. It is, accordingly, the business of the teacher to select some appropriate outcome as the immediate aim, and so to direct the classroom activities as to make predominant the characteristic mental response essential to that type of learning. The teaching procedures designed to accomplish each of these ends have been known as lesson types. Although some educators prefer a more informal term, the classroom practices, however designated, must stimulate the peculiar mental processes appropriate to each outcome.

The teaching of habits and skill. The acquisition of skill, involving, as it does, the establishment of co-ordinated habits, depends upon the effective practice of a definite pattern of response. Accordingly, the first step must be a clear impression of this pattern, a guiding image to which the repeated response must conform. In order to secure accurate repetition while the response is being made habitual, alert attention is necessary, and this in turn demands lively and sustained interest. During this formative stage the periods of practice must be wisely distributed to avoid on the one hand fatigue and failing attention, and on the other the loss of precision and permanence in the response, due to lack of follow-up and adequate application. Psychological research has furnished full and reliable data relative to the most economical and effective distribution of such practice.

The series of teaching procedures designed to secure these outcomes has traditionally been termed the drill lesson. As a formal teaching procedure, its weaknesses lie in the necessity of artificial devices for stimulating interest and attention, in the apathy of the pupils, and in the correspondingly transient results unless laborious drill follows drill. The school of Progressive educationists prefer to make practice for skill incidental, maintaining that the livelier interest and the sense of need for a specific skill enable the learner to attain better results with less practice. They admit that fewer mechanical processes are systematically practiced, but argue that it is futile to try to teach skills for which the child finds no immediate usefulness. The charge that many very important skills are thus neglected constitutes a highly controversial issue between the Progressives and their critics.

The teaching of information. Any adequate mastery of knowledge involves more than mere ability to reproduce facts; otherwise items of information might as well be taught by drill and mechanical repetition, as habits are learned. Granting that there are some oft-needed facts that may appropriately be fixed in such manner, we must recognize the major educational need, in the face of the bewildering array of facts and alleged facts constantly thrust before one, for developing the ability to select, to evaluate, to organize, and to apply facts and principles. The need for information arises out of problems encountered, and the necessity for knowledge as a guide to action. The conscious selection of facts and their application in reaching a decision constitutes thinking, whether in simple or complex form. Knowledge thus utilized is also more permanently retained. In view of these advantages, modern teaching uses problem-solving procedures as far as possible in situations involving the mastery of facts and principles.

The first essential in a problem lesson is planning a situation in which the pupils will encounter a problem, one of sufficient reality and adjusted difficulty to challenge their interest and efforts. Then follow the logical steps of solution: the search for pertinent data, the suggestions as to possible solutions, the selection of one which best satisfies the conditions, and the final verification. Again, the inevitable conflict between schools of method appears. The radically progressive group maintains that the problems arising from the free interests of the pupils and the values accruing from the process of solving them are adequate ends in themselves. The conservatives hold that the problem method is primarily a means for vitalizing selected materials of social value, and as such should be subordinated to the requirements of a comprehensive and orderly range of subject-matter.

The teaching of appreciations and attitudes. This type of teaching, dealing with the emotions and appropriate forms of expression for them, has suffered most of all from confusion and futility of methods. The essential inner response on the part of the learner must be one of genuine emotional participation. He must identify himself in sympathy and ardent feeling with literary and historic characters, with the artist or composer, with struggles for justice and social betterment, with the hopes and aspirations of humanity. To arouse genuine feeling and guide its expression toward wholesome and inspiring forms is truly difficult. Formal recitation methods, critical analysis, preachments, reminders of duty, or even sentimental appeals usually are ineffective in controlling the inner emotional response of the child. Too often the reaction is one of more or less concealed aversion toward the thing held up for appreciative admiration. Unobtrusive but contagious enthusiasm on the part of the teacher, with a sympathetic thoughtfulness which connects the new situation or material with previous emotional experiences of the children, will best serve to arouse the warmth of participation necessary to enkindle new appreciations and loyalties.

The methods of the Progressive School, with the emphasis upon creative expression, freedom from restraint, socialized activities, dramatization, and artistic experimentation, show to their greatest advantage in the field of appreciation, although there are prominent educators, such as Bagley, who charge them with producing fickleness of interest, a lack of loyal tenacity, and a superficiality in tastes and moral fiber. From any point of view, the basic need in vitalizing the ideals, tastes, and loyalties of the learner is to arouse eager and wholesome emotional responses, free from the chill of restraint or compulsion.

Socialized activities and projects. In a preceding chapter extended consideration was given to the social obligations of education. The responsibility for preparing future citizens, through practice as well as through instruction, to play well their part in our complex society must definitely be recognized in the methods of teaching. It is not enough that the materials of instruction possess desirable social values. The learning experiences in which these are encountered should furnish, as far as possible, participation in social relationships which give wider meaning and practical corroboration to the principles taught. The teaching procedures which have developed from a recognition of this obligation and the attempt to fulfill it have given us the socialized recitation and socialized classroom activities.

The fundamental characteristic of a genuinely socialized recitation is the willing acceptance by the pupils of a large share of the responsibility for the success of the work undertaken. The solution of a problem, the investigation of related facts, or the mastery of significant processes becomes a group enterprise in which all are to have a definite share in the labor and a corresponding share in the satisfactions of successful achievement. In its best forms, such an undertaking is a truly co-operative adventure, providing practice in the performance of varied group responsibilities. The successful use of this plan as a method of teaching naturally depends upon the development of a favorable class attitude, and the critical stage is that leading up to the assignment. The sharing by the pupils must begin at this time, and the situation must be so planned that the group will feel a provocative challenge in the new undertaking. Self-chosen tasks are more willingly and earnestly undertaken, and the enterprise, from the first apportionment of related responsibilities to the final collaboration in evaluating results, affords rich experience in the adjustments of co-operative endeavor. The stimulus to interest and the favorable effects upon other factors essential to learning are advantages of the socialized recitation which supplement in a valuable way the practical usefulness previously discussed.

Socialized activities frequently assume the form of projects, although the latter may be strictly an individual undertaking. Although there have been disagreement and confusion as to the definition of a project, it is usually regarded as a voluntary undertaking which involves constructive effort or thought and eventuates into objective results. The teaching value of a project lies in the stimulating series of problems which arise and the fresh appeals to interest which result from successive developments in the progress of the undertaking. The concrete, tangible form of the materials employed frequently adds clarity to the pupil's reactions and the related information is more permanently retained. When the project has social phases and enlists organized group efforts, it has distinctly superior educational value.

Many socialized activities go beyond the recitation and merge with the broader extra-curricular enterprises considered in the preceding chapter. In fact, general classroom organization and its appropriate functions should blend harmoniously and indistinguishably with instructional procedures. The more complete such unity becomes, the more fully may the whole interests and needs of the child be served.

Relation of supervision to teaching. The opening sentence of this chapter declared that the whole function of teaching is to promote desirable learning. It would be entirely correct to make the same statement regarding supervision. The criteria by which the scope, the methods, and the effectiveness of supervision are finally to be judged lie in the effect upon the progress of the pupils. While the objectives of teaching and supervision are fundamentally the same, the means employed are obviously different. The teacher works directly with the pupils, and in the immediate situation designed to stimulate learning; the supervisor deals directly only with the teacher and the auxiliary factors affecting the learning situation.

There are three major factors in the total situation upon which supervision can exercise a helpful influence; namely, the teacher, the course of study, and the general facilities under which school work is carried on. The last of these is mainly the responsibility of the administration, but the supervisor may greatly assist the teacher in adapting a program to the facilities available. The second factor named is one which should be the joint concern of administration, supervision, and teaching, in accordance with principles to be discussed in a later chapter on the selection of subject-matter. The interpretation of the curriculum and the service of co-ordinating the contributions of many teachers into mutually helpful uses of the materials of the curriculum constitute peculiar opportunities for usefulness in supervision. The chief value of supervision, however, is in the possible relationships to the teachers themselves, especially in promoting improvement in teaching efficiency.

Scope and methods of supervisory practice. The past two decades have witnessed a fundamental change in the philosophy of school supervision. The old point of view was autocratic. Dictating procedures and testing results were the chief supervisional activities. Not infrequently the visits of a supervisor were so suggestive of espionage as to give point to the term "snoopervision," coined by a clever writer. Happily these practices are for the most part fast following similar teaching methods into the limbo of oblivion. The modern conception of supervision emphasizes friendly stimulation, co-operative study of instructional problems, and assistance in those details of evaluation and adjustment which the individual teacher cannot easily or satisfactorily accomplish alone. Teacher-improvement, like other phases of learning, must come through self-activity. The function of supervision, as it affects the teacher, is to encourage and to assist in guiding such activity.

In order to accomplish such service, modern practices in supervision are designed to help the teacher comprehend more clearly the social, physical, and psychological factors which are involved in a sound educational program. Hence, supervision at one time may invite systematic analysis of the social elements which should vitalize the curriculum. Again, it may direct attention to the biological principles underlying normal and vigorous child development, with special reference to the environmental conditions and influences of the classroom activities. Further leadership may be offered in a study of psychological considerations, not only as these affect ordinary learning responses, but also as they relate to the more subtle personality adjustment and social attitudes. Whatever the phase of teacher responsibility under attention may be, the characteristic note of modern supervision should be inspiration and sympathetic co-operation.

Team-work in the improvement of teaching. In the spirit of this co-operative effort to develop constantly improved teaching procedures, the teacher is encouraged to assume a large measure of initiative in devising means to that end. If the opportunity and responsibility are accepted by the teacher in a frank, professional manner, there usually results a most helpful and stimulating relationship. While the teacher is trying fresh methods of procedure the supervisor is ready to counsel, to offer supplementary suggestions, and to help appraise and measure the success of each new effort. Sharing in this way the satisfaction of active partnership in progress toward a common goal, the promotion of better teaching and classroom relationships, both teacher and supervisor enjoy thereby some of the most gratifying experiences which professional service can furnish.

In many cases, of course, the teacher is reluctant to accept the implication that help is needed or that substantial improvement is possible. Such an individual constitutes the most difficult and most delicate problem of the supervisor; unfortunately, there are still many such teachers, and they are usually the ones most in need of help. Again, it must be remembered that improvement can come only through self-activity, and the situation still calls for enlisting co-operation. The approach must now be indirect, in the hope that the teacher may be led, through engaging in related educational activities, to a discovery of her own need for improved teaching methods. A joint testing program, a co-operative study of curriculum materials and more effective uses of them, or a committee assignment on causes of pupil failure, may suggest some of the effective means for inducing a more critical self-appraisal and promoting a more professional attitude. A truly professional attitude implies eagerness for improvement. The supervisor who is patient and resourceful enough to plan co-operative activities which reveal needs for improvement in teaching, and incite a willing spirit toward undertaking such improvement on the part of an entire group of teachers, has not only performed a splendid educational service for the schools but has at the same time started the individual teachers upon the path to genuine happiness and increasing enjoyment in the creative art of teaching.

TOPICS FOR DISCUSSION

1. Progress in the attainment of a particular skill frequently is hindered because of some unfortunate emotional obstacle. Give an example of this from your own experience and suggest ways in which the difficulty might have been prevented or remedied.
2. Under what circumstances does a problem become real for a pupil? Can assigned problems be made to have similar learning value?
3. What justification is there for the frequent comment that the poorest teaching is done in our colleges and universities? Suggest causes for the practices which prevail.
4. Try to formulate a definition of teaching that would be helpful as a basis of discussion between a teacher and a supervisor.
5. What educational values are there in the laboratory method of teaching? Why has it been confined so largely to science?
6. Why is the lecture method of instruction so often ineffective? Under what circumstances is it successful?
7. What is the essential distinction between the process of mastering information and that of developing appreciations?
8. What basis, if any, is there for the complaint that the usual school methods tend to dull and destroy the natural curiosity of the child?

9. What do you regard as the most fundamental point at issue between the advocates of "progressive" methods and their opponents?
10. Why is the same method of instruction successful with certain pupils and unsuccessful with others of equal ability?

SUGGESTED EXERCISES FOR STUDY AND DISCUSSION

1. Indicate the best response, and verify:

—— Principles governing teaching methods are mainly (1) biological (2) psychological (3) sociological (4) historical (5) philosophical

—— The drill method is the proper procedure for developing (1) appreciations (2) attitudes (3) habits of study (4) skills (5) understanding

—— A method of teaching demanding least activity on the part of the student is the (1) demonstration (2) discussional (3) dramatic (4) laboratory (5) lecture

—— The most difficult part of making an assignment is (1) giving a clear idea of what is to be done (2) giving a clear idea of why the work is to be done (3) giving a clear idea of how the work is to be done (4) adjusting the work to the individual pupil

—— Learning how to study should begin in the (1) kindergarten (2) elementary school (3) junior high school (4) senior high school (5) junior college

—— The poorest teaching is likely to be found in the (1) kindergarten (2) elementary school (3) junior high school (4) senior high school (5) junior college (6) teachers college (7) university

—— The most effective supervision can be accomplished by means of (1) bulletins (2) classroom visits (3) co-operative efforts (4) demonstrations (5) individual conferences (6) teachers' meetings (7) teacher-visiting

—— Supervision should be for (1) all teachers (2) new teachers (3) substitute teachers (4) superior teachers (5) weak teachers

—— It is the main function of supervision to (1) emphasize learning of subject-matter (2) encourage teacher-initiative and self-direction (3) insist on following the course of study (4) rate teaching success (5) stress specific methods and devices

—— The chief aim of supervision is (1) child growth (2) helping poor teachers (3) maintaining minimum standards (4)measuring educational progress (5) uniformity of work

2. Indicate whether these statements are true or false (verify):

T. F. Learning how to study depends upon making the task both interesting and necessary.

T. F. Dewey does not believe in externally imposed aims.

T. F. Docility is a virtue in the learning process.
T. F. Dewey does not believe that pupils' activities should be guided by suggestions from teachers.
T. F. Dewey believes in the intrinsic significance of every growing experience.
T. F. Teaching methods should connect the past with the present.
T. F. Only one thing can be learned at a time.
T. F. Repetition *per se* does not result in learning.
T. F. Dewey considers the effort theory in education inadequate.
T. F. Dewey believes subject-matter must be interesting in itself rather than made interesting.
T. F. If the teacher knows his subject, good teaching is assured.
T. F. Herbart's doctrine of apperception is still acceptable.
T. F. Creative supervision is better than close supervision.
T. F. Herbart's formal steps are obsolete today.
T. F. The assignment is a stimulus situation.
T. F. Mass methods of teaching disregard individual differences.
T. F. Standardized tests tend to mechanize the teaching process.
T. F. Quantity of activity is more important than quality.
T. F. Periods of practice should be wisely distributed.
T. F. Education in independent thinking should precede the indoctrination of certain good racial experiences.

SELECTED REFERENCES FOR ADDITIONAL STUDY

Brueckner, Leo J., and Melby, Ernest O. *Diagnostic and Remedial Teaching.*

Based on the scientific point of view as to use of diagnostic tests and the adaptation of teaching to the correction of the deficiencies revealed.

Burton, William H. *Supervision and the Improvement of Learning*, chaps. I, II, and IV.

Not a recent book but still extremely helpful in clarifying the relationship between teaching and supervision.

Doughton, I. *Modern Public Education—Its Philosophy and Background.*

In chapter IX is presented a broad view of method in education. Chapter II shows the historical development of the child-centered point of view in education, and provides a good reading list.

Douglass, H. R., and Boardman, C. W. *Supervision in Secondary Schools.*

An excellent treatise on supervision, emphasizing democratic relationships. Chap. II gives their point of view, the remainder gives its applications.

Garrison, Noble L. *The Technique and Administration of Teaching.*

A treatment based throughout on co-operative planning by teacher and supervisor. Many practical illustrations.

Kuehner, Q. A. *A Philosophy of Education.*

Chapter xvi gives selected quotations on the problem of method.

Monroe, Walter S. *Directing Learning in the High School*, chaps. iii–x.

Bases discussion of learning activities by types directly upon principles of educational psychology.

Morrison, H. C. *The Practice of Teaching in the Secondary Schools.*

A complete and challenging presentation of the author's plan for securing thorough learning through comprehensive units.

Mossman, Lois C. *Principles of Teaching and Learning in the Elementary School*, chaps. ii–v.

Clear and easy reading. Emphasizes children's experiences as starting-point in teaching.

Palmer, Anthony R. *Progressive Practices in Directing Learning.*

Concise and practical, with good illustrative material.

Rugg, Harold, and Shumaker, Ann. *The Child-Centered School*, chaps. v and vi.

A popular and readable presentation of teaching practices in the "progressive" type of schools.

Thomas, F. W. *Principles and Technique of Teaching*, chaps. vi to xi.

Detailed discussion of general principles of learning and their application in various lesson types.

CHAPTER XV

SELECTION OF SUBJECT-MATTER

The significance of subject-matter. Educational planning seeks to control in a beneficial and constructive way the series of situations to which the child reacts, and from which learning results. One of the major factors in any situation calculated to stimulate a desirable response on the part of the learner is the array of materials comprising subject-matter. This includes not only textbooks and similar reading matter, but such other objective materials as may contribute directly to the provocative stimulation of the laboratory, the shop, or the classroom. The nature of such materials and the order in which they are presented exert a strongly determining influence upon learning. Some of the sharpest conflicts in modern educational discussion grow out of issues involved in the selection and organization of subject-matter. On that account, it is especially important that careful consideration be given to modern points of view in regard to curricula, courses of study, and the principles which seem to have validity in connection with them.

What is a curriculum? Some confusion exists as to the precise meaning of the terms curriculum and course of study, as used by writers on these subjects. This is due to the changing conception of the curriculum from that of material set out to be learned, to that of the activities in which the pupils are to engage, or even of the experiences in which the learners participate. A good statement as to the modern use of these terms is contained in the *Twenty-Ninth Year Book* (p. 65) of the National Society for the Study of Education, as follows:

> The *curriculum* may be defined as the totality of subject-matter, activities, and experiences which constitutes a pupil's

> school life. A *course of study* is the material, usually in pamphlet form, which sets forth for the teacher such items as the objectives and content of a given subject, and the activities and books to be used to accomplish desired results.

It will be both in accord with the most frequent modern usage and most practical for our purpose to regard the curriculum as the series of experiences growing out of the activities engaged in by the learner, from which he derives the skills, attitudes, and knowledge essential to the realization of the purposes of education. Correspondingly, subject-matter should be considered as constituting the materials with which the activities are concerned, and which, by their nature, determine to a large degree the character of the activities themselves. Obviously the principles upon which the selection of such material is made are of fundamental importance.

Conflicting principles of selection. As soon as we begin to seek a basis for the selection of subject-matter, there is encountered again that familiar clash in viewpoints as to the relative importance of pupil-interest and social values. Even among those who hold that the social or intrinsic value of the material should be given preference over its interest appeal, there is disagreement as to whether immediate usefulness or the more permanent values for later life should hold priority. Studies in the appraisal of subject-matter values have been made at great length from each of the two major viewpoints in question. A comprehensive listing of such studies has been made by Caswell and Campbell in their book, *Curriculum Development.* Their tabulation of studies relative to the value of materials on the basis of use for adult life covers five pages, while that on the basis of pupil-interest extends over six pages.[1]

In the writings of the extremists on this issue there seems almost hopeless dissension. As an advocate of giving foremost place to materials which introduce the pupil directly and systematically to the social responsibilities and intellectual achievements of modern civilization, Bagley[1] sharply criticizes the "freedom theory," which makes interest the foremost consideration, in these words:

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[1] Caswell, H. L., and Campbell, D. S. *Curriculum Development,* pp. 261–64 and 266–71. American Book Company.

> An educational theory which says not merely in effect but in so many words, "If you do not have an immediate interest in a task you are justified in evading it" — such a theory is about as debilitating in its probable influence as can be conceived. And yet it is just such a theory which has been weakening the fiber of American education for a generation and which is now being preached and, so far as possible, applied, in a most extreme form on a nation-wide front.

Equally strong statements are made by those holding the opposite view. The point usually emphasized in their arguments is that the learner really responds effectively only to such material as arouses his interest. The value of material from an adult standpoint means nothing if the pupil finds in it no vital connection with his present interests, and consequently puts forth no genuine effort at mastery. Moreover, if pressure is applied to secure compliance, the resulting resentment may engender attitudes which are even worse than the loss represented in the transient and superficial learning of uninteresting information.

In this contested issue, the reader's own experiences, studies, or temperament may incline him to one or the other of the extremes. Fortunately, in actual practice there is much overlapping of the materials in modern schools, even when chosen from theoretically opposing viewpoints. Pupil-interest, with intelligent guidance, tends to prefer activities with marked social significance for later life responsibilities. On the other hand, those who hold to adult life-values as a basis for selection usually realize the necessity of making this material interesting, and organize it accordingly. Those who seek a workable middle ground in which both types of values are preserved will have a difficult but not an impossible task. On the one hand will be the danger of overestimating the importance of transient and superficial interest forms. On the other will be the influence of potent factors which tend to formalize material into those logical classifications which adults have found convenient in their familiar use of it, but which have little significance or appeal to the learner in his first encounter with the material. In order that the selection of subject-matter may be guided by a sound philosophy and based upon an understanding of the difficulties to be met, it is important to note some of these factors which may lead to formalism unless intelligently used and controlled.

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[1] Bagley, W. C., *School and Society*, vol. 37, p. 410–11.

The textbook. · The most obvious and the most frequently used source of material is the textbook. The modern textbook is more than a mere collection of teaching material, however, and provides a more or less definite teaching guide. The extent to which this is true was well emphasized by Suzzallo,[1] in these words:

> The textbook is the most important of the teacher's tools. In determining the subject-matter of the child's experience it is more decisive in day-to-day affairs than is the course of study outlined by the school system. In determining teaching procedure the text is more influential from hour to hour than a manual of methods. In fact the total series of textbooks in use by students and teachers are the real course of study and manual of teaching. This is not the usual theory but it is actual fact.

The very fact that textbooks are designed to supply so fully both teaching materials and guidance for the teacher carries a corresponding danger that a too passive and uncritical use will be made of them. The frequent result is that the teacher's attention and planning are centered upon sections of the text, rather than upon the immediate needs and interests of the pupils. In most schoolrooms the textbooks will continue to be the teacher's most important tools, but these must be subordinated as tools and not allowed to serve as substitutes for that intelligent planning which takes into account the most appropriate experiences for that particular group of pupils in the light of their progress and ability, as well as their interests. To keep the textbook in its proper place as providing a prime source of reference material, without allowing it to dominate unduly the sequence of materials, is a task that calls both for clear thinking and resourcefulness.

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[1] Suzzallo, Henry A. Introduction to Fuller's *Scientific Evaluation of Textbooks.* Houghton Mifflin Company, p. iii.

Traditional organization of subject-matter. One of the most stubbornly persistent factors to be encountered, when one attempts to select materials in accordance with a modern philosophy of education, is the traditional patterns of subject-matter. These have been sanctioned by custom and, especially at the secondary levels, are accorded an exaggerated importance by higher institutions of learning. It should be conceded that carefully organized bodies of subject-matter, tested and refined through extended use and experience, may have some educational advantages. At the same time these materials must be subjected to challenge and be required to find justification in the light of sound modern objectives.

It is at this point of objectives and justification values that the champions of traditional materials are most likely to become vague and unscientific. Such expressions as "to stimulate thought," "to become familiar with," "to train sustained reasoning," "to supply intellectual background," or even "to provide intellectual discipline" are frequently used, indicating inadequate knowledge of modern psychology as well as failure to analyze values on the basis of definite social objectives. Certain items of traditional subject-matter can probably be justified, at least in modified form, but the type of defensive argument often employed warrants an especially critical analysis of the claims for such materials so that a fair evaluation can be made.

Influence of quantitative standards. The scientific movement in the direction of objective measurements has had, on the whole, stimulating and beneficial results. One phase of this movement was the establishment of comparative standards or norms in various fields of subject-matter. Since these so-called standards represented attainment in skills or factual knowledge, as usually taught and emphasized, the average practice in regard to materials stressed has tended to become the criterion. Teachers desiring to make a creditable showing have endeavored to equal or surpass these averages or "standards." For example, the goal of attainment in arithmetical skills for third-grade pupils tends to be determined not by what is socially desirable under modern conditions, but by what traditional teaching practice has accomplished. The pressure of general competition to reach these standards tends to accentuate such emphasis, and to fix more firmly the pattern of things as they are and have been rather than as they should be. A teacher must have a well-grounded philosophy of education in order to be able to utilize the benefits of scientific measurements without losing sight of the greater obligation to adapt and improve instructional materials and to regard the averages of traditional practice merely as suggestive comparisons rather than as binding standards.

Pressure of special groups. It is a characteristic feature of our political system that organized groups seek to confirm by law the inclusion of certain subject-matter in the school program. The accumulation of materials thus legally required to be taught reached in one state, a few years ago, a total of twenty-seven subjects for the elementary schools alone. Groups resorting to such legal pressure are often sincerely interested in some patriotic or humanitarian end, but have either an exaggerated conception of its educational importance or a misguided idea as to the best means of attaining it. Even where no legal compulsion exists, there are frequently interested community groups which strongly favor or vigorously oppose certain specific subject-matter, and are able to bring corresponding pressure to bear relative to such material.

Teachers, either as individuals or as members of the educational staff, must recognize these forces and, as far as possible, interpret the aims and obligations of the school to the community in a way to reassure public opinion regarding the professional leadership provided. Outside pressure is greatest where there is the least understanding of and confidence in the program of the school. Conversely, where the public is adequately informed regarding well-planned courses of study, there is usually little disposition to interfere with proper educational service. Unwarranted legal specifications regarding subject-matter can usually be corrected only by similar enlightenment on a scale wide enough to affect legislation. The problem is one of public relationships, the importance of which has already been discussed as one of the responsibilities of school administration, but in which the whole staff must share.

What should a course of study include? One of the most extensive evaluations yet made of courses of study is that of Stratemeyer and Bruner.[1] As a result of their studies they listed the following six features as strong points characteristic of the best courses of study:

1. Clear statement of objectives.
2. Provisions for individual differences.
3. Suggestions under each subject to give teachers insight into value of subject-matter and methods of teaching it.

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[1] Stratemeyer, Florence B., and Bruner, Herbert B., *Rating Elementary School Course of Study*. Bureau of Publications, Teachers College, 1926, p. 7.

4. Illustrative lessons given.
5. Material based on present conditions.
6. Well-selected references.

A course of study which makes ample provision for these features as means of guidance and assistance in teaching will probably furnish the greatest help consistent with the flexibility essential to the adaptation which should be made by the individual teacher. No ready-made pattern of subject-matter can be expected to fit precisely each particular teaching situation. Appropriate adaptations must be made, which call for a sympathetic understanding on the part of the teacher, both of the needs of the pupils and of the educational philosophy underlying the course of study. Without such understanding and wise interpretation, even a well-planned course of study may become a formalized imposition, doing violence to the educational interests of the pupils and betraying by misuse the educational leadership responsible for the course. The difficult task of building good courses of study and at the same time preparing teachers to interpret and to use them intelligently is one of the major problems of school administration.

Teacher participation in preparing courses of study. In recent years it has become a prevalent custom to have a considerable number of the teachers in a school system engaged in helping to revise courses of study. In many cases the plan of committees and sub-committees includes in participating membership representatives of every school in the system, thus bringing into direct or indirect contact with the revision program practically every teacher on the staff. Although this movement for extensive participation by teachers in building courses of study has had rather wide adoption, it has not escaped vigorous criticism. Such educators as Bagley and Whipple have condemned the plan upon the ground that classroom teachers have neither the time nor the training for such technical labors, and that the preparation of courses of study should be the responsibility of specialists who are thoroughly familiar with the best practices elsewhere and can give careful consideration to proposed innovations.

There are, on the other hand, weighty reasons why the classroom teachers should have the largest possible share in building the course of study. It should be remembered that the course of study, no matter how perfectly planned in theory, does not become a real curriculum until it affords the learner a vital experience. This important step of transforming a course of study into a live curriculum depends upon the understanding and skill of the teacher. Surely there is no better way for the teacher to acquire the needed understanding of the essential aims and values underlying a course of study than to have had some share in its formulation. At the same time, the experience and direct familiarity with the difficulties of instruction possessed by the teacher is of prime value in formulating, testing, and adapting the course of study to the most effective forms for use as a basis of vital learning experiences. Even a mediocre course of study in which the teachers feel a personal and friendly interest through a share in its formulation is preferable to a technically superior course in the success of which the teachers feel no such intimate and friendly interest. Even the most willing and well-disposed teachers are less likely to have a clear understanding of the objectives and instructional utility of a course of study in which they have had no creative or participating share.

The obvious need for a trained director and co-ordinator of these committee activities and contributions can usually best be met by having on the staff a trained curriculum specialist who has the judgment, tact, and teaching skill to serve as a real educational leader rather than as an omniscient dictator during the naturally slow process of preparing courses of study. Familiarity with the best practices elsewhere can thus be available for suggestive and corrective utility, while the details most closely related to actual classroom problems can be contributed and evaluated by the teachers themselves in discussions presided over and guided by a competent leader.

Integrating the materials of instruction. It has long been recognized that the customary divisions of subject-matter tend to become compartmentalized and to have little vital relationship one with another in the experience of the pupils. It is not difficult to understand how the segregation and classification of specialized fields of knowledge may be a convenience for adult reference or for intensive study. The dictionary is a logical and useful compendium, invaluable for reference, but lacks by itself the unity and coherence needed for the facile acquisition of language mastery. Something of the same dissociation from the normal connections and situations in which knowledge is ordinarily needed and which give it significance characterizes the distinctions by which traditional school subjects are marked off one from another. One of the most important responsibilities in the selection and organization of subject-matter is that of unifying or integrating its elements so that the totality of any learning experience may have harmony and discernible relationships with life as the learner knows and interprets it.

One difficulty in attaining this integration arises from the fact that the sense of unity and relationship must be felt as a part of the learning experience itself. On that account many attempts at integration have proved futile because the relationship was, from the standpoint of the learner, an artificial imposition which only increased complexity and confusion. Whatever viewpoint one may hold regarding the dominant importance of pupil-interest as a criterion for selecting individual items of subject-matter, there is hardly room for debate on the necessity of such interest as the integrating factor which brings together into significant unity elements from traditionally separate fields. This unity must arise from the purpose of the learner, and his recognition of the related value of various elements in the attainment of desired ends.

Day-to-day activities and subject-matter. After all reasonable steps have been taken to assure that the teacher has a sympathetic understanding of the curriculum and of the proper function and use of the course of study, there still remains the daily task of utilizing these materials as a basis for the learning experiences of the pupils. The most effective form is through the classroom activities. This term, in modern practice, refers to those undertakings growing out of, or at least vitalized by, the normal interests of the pupils, the development of which will naturally introduce the learners to the appropriate subject-matter, and lead to the outcomes desired. Out of the many activities that may be suggested under the stimulus of a classroom situation, some selection and elimination will be necessary. Here the skill and resourcefulness of the teacher meet a real test. The obligation to have selected the activity possessing the greatest usefulness and fertility for educational ends must not overshadow the interest value or detract from the eager sense of genuine participation and shared responsibility on the part of the pupils. On that account, the criteria and method of selection for a classroom activity require careful consideration among the recommended standards for determining the value of a school activity; a good and reasonably conservative one is the set of criteria proposed by Chapman and Counts,[1] in the following form:

1. The activity must be one not provided by the out-of-school training.
2. The activity must be within the capacity of the individual.
3. The activity must, as far as is consistent with criterion (4), be of interest to the individual.
4. The activity must with the maximum economy of time leave behind it, in the form of habits, skills, knowledges,

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[1] Chapman, J. C., and Counts, G. S. *Principles of Education,* p. 371. Houghton Mifflin Company.

> procedures, and ideals, powers which will, with a high degree of probability, be employed by the individual in the important activities of his life.

As already pointed out, many progressive educators would emphasize the criterion of interest much more strongly than is done in the set of principles just quoted. Other proposed criteria could be quoted, some more conservative, many far more radically "progressive." Every teacher must make some such evaluation of his own. It should suffice here to emphasize the importance of seeking sound principles upon which to make the decision.

Keeping selections tentative and adaptable. It should never be forgotten that subject-matter is after all only a means to an end. A fruitful learning experience, with the appropriate responses, adjustments, and desirable outcomes, is the essential aim. Almost any adaptation in planned materials is justified if only these critical values can be better attained by such modification. This does not mean that careful planning relative to instructional materials is not essential. It means that greater variety and versatility are demanded and that a correspondingly broader range of suitable materials should be planned and available. Upon such a basis of anticipated needs the learning situation can be progressively modified to conform to the developments of the lesson. Without a ready array of the materials most likely to be of value the teacher is ill-prepared to provide the guidance and stimulation most needed by the pupils. Subject-matter is indispensable to directed learning, but no part of it should be regarded as sacred. Intelligent selection at the moment of need implies a corresponding rejection, or at least disregard, of other materials originally regarded as of probable value but failing, under the actual conditions of trial, to call forth the responses and activity essential to the outcomes desired.

The function of subject-matter calls for careful appraisal from the standpoint of a philosophy of education. The fact that courses of study have in the past been too rigid and have been allowed to assume unwarranted domination over the classroom program should not incline one to the opposite extreme of indifference toward the value of well-organized fields of knowledge as a systematic basis for an educational program. Well-considered objectives should constitute the first criteria for selection, supplemented by the equally important test of adaptability to the demands of pupil-interest in actual learning situations. The technical steps in the scientific formulation of a course of study require special study, and cannot be fully analyzed in a discussion of this type. An attempt has been made, however, to indicate the fundamental considerations relative to the selection of subject-matter which have bearing upon a philosophy of educational practice.

TOPICS FOR DISCUSSION

1. What educational significance is there in making the distinction noted between a curriculum and a course of study?
2. To what extent do you agree with Suzzallo's estimate of the dominating influence of the textbook in determining choice of subject-matter? What are the dangers in this, and how can they be avoided?
3. Choose some section of traditional subject-matter, such as is found in geometry, Latin, or history, and evaluate it in the light of modern objectives.
4. How far are organized groups of citizens entitled to consideration in their promotion of specific materials for inclusion in the course of study?
5. Choose some typical unit of any generally used standardized testing material and show:
   (a) Its dangers in shackling curriculum development.
   (b) Ways of using it which would avoid these dangers.
6. "The fundamental assumption lying back of the philosophy of instruction which would have interest dictate the nature of the activity is in error; the immature individual, by reason of his very immaturity, cannot assess his interest in an activity in the light of its potentialities. He will often show interest in an activity out

of which nothing can grow, and, on the other hand, for long periods, will often fail to identify himself, of his own initiative, with activities which are basic to successful adaptation in a complicated world." Chapman and Counts, *Principles of Education*, pp. 376–77. Criticize this quoted statement, giving illustrations of the erroneous practice, if you agree with the indictment, or refuting it if you regard the statement as unjustifiable.

7. Give examples of the tendency for courses of study to lag behind present social needs, both from the standpoint of children's interests and that of modern society. Suggest ways of correcting this tendency.
8. How may the selection of subject-matter provide adequately for individual differences without resorting to separation of pupil-groups?
9. Can you suggest a new subject or body of material that should be introduced into either the elementary or secondary school course of study? On what grounds would you justify such an addition?

SUGGESTED EXERCISES FOR STUDY AND DISCUSSION

1. Select the best response, and verify:

—— The origin of the curriculum is (1) biological (2) psychological (3) sociological (4) historical (5) philosophical

—— An antiquated curriculum is mainly due to (1) ignorance (2) inertia (3) politics (4) selfishness (5) tradition

—— The probable usefulness of a school activity is best revealed through (1) common errors (2) consensus of opinion (3) content of textbooks (4) current literature (5) frequency of occurrence (6) job analysis (7) mental discipline (8) philosophy of education

—— The main reason for including an activity in the school program should be (1) demand of political minorities (2) demand of teachers (3) interesting to child (4) part of human culture (5) prerequisite to further education (6) probable usefulness (7) social demands (8) tradition (9) unprovided elsewhere (10) within child's capacity

—— The most valuable transfer element in a school activity probably is (1) content (2) interest (3) procedure

—— According to children's interests the first unit in Nature Study should be (1) birds (2) garden plants (3) insects (4) mammals (5) trees (6) wild flowers

—— A man who was particularly concerned with the question of "what knowledge is of most worth" was (1) Froebel (2) Herbart (3) Pestalozzi (4) Rousseau (5) Spencer

—— School activities which are necessary for specialized training are usually known as (1) constants (2) free electives (3) variables

—— The most conservative feature of the public school system is the (1) curriculum (2) organization (3) teachers (4) teaching methods (5) testing methods

—— Geography as a special subject was an outgrowth from (1) arithmetic (2) astronomy (3) dialectic (4) geometry (5) grammar

—— The curriculum should be constructed by (1) educators (2) committees of scholars (3) legislatures (4) parent-teacher associations (5) "patriotic" groups (6) school boards (7) scientists (8) teacher participation (9) textbook writers

2. Indicate whether the following statements are true or false (verify):

T. F. Creative education organizes the curriculum around subject-matter.
T. F. Each community must have a different curriculum.
T. F. Curriculum construction should not ignore spatial and social mobility.
T. F. Democracy requires a utilitarian curriculum.
T. F. Thorndike believes that some subjects are better than others for the general improvement of the mind.
T. F. Bode believes that scientific surveys are inadequate to give curriculum objectives.
T. F. All pupils can do the same work if given enough time.
T. F. Real life of spider cannot be as interesting as fairy tales.
T. F. Classification of experience into subjects is arbitrary.
T. F. The curriculum is the school environment.
T. F. Relatively too little time is devoted to the three R's.
T. F. Child's interests are adequate for subject-matter selection.
T. F. Reconstruction is more progressive than reorganization.
T. F. There is a tendency to integrate subject-matter into teaching units.
T. F. Curriculum construction must center around a particular child.
T. F. Meiklejohn believes the way to understand civilization is to study subjects.
T. F. The curriculum should contain some uninteresting material.
T. F. Interest and attitudes are more important than information.
T. F. Learning to face realities is hindered by purposeful activities
T. F. Thorndike believes the time for learning anything is when one needs it.

SELECTED REFERENCES FOR ADDITIONAL STUDY

Bode, Boyd H. *Modern Educational Theories.*

Excellent analysis and evaluation of practices in curriculum revision.

Briggs, T. H. *Curriculum Problems.*

Interesting and rather brief analysis of some questions in philosophy of curriculum-making

Burton, William H. *Introduction to Education*, Part IV.

A brief but excellent and interesting discussion of principles underlying curriculum study.

Caswell, H. L., and Campbell, D. S. *Curriculum Development.*

Probably the most practical and helpful book in this field yet written.

Harap, Henry. *The Technique of Curriculum Making.*

Very practical guide to curriculum-making, based on the analysis of steps.

Kuehner, Q. A. *A Philosophy of Education.*

Chapter xv consists of selected quotations regarding the function of the curriculum.

Lincoln School Staff. *Curriculum Making in an Elementary School.*

Excellent discussion and examples of practices in organizing units of work for elementary grades.

National Society for the Study of Education. *Twenty-Sixth Yearbook; Curriculum Making, Past and Present.*

The most comprehensive discussion and array of materials compiled up to that time.

Rugg, Harold, and Shumaker, Ann. *The Child-Centered School*, chap. VIII.

Presents the "Progressive" point of view as to planning the curriculum.

Stevens, Marion P. *The Activities Curriculum in the Primary Grades.*

Abundant examples of activity-units appropriate to primary grades.

Uhl, Willis L. *Secondary School Curricula.*

Good historical account of secondary curricula, with analysis of needs for modern revision.

Williams, L. A. *The Making of a High School Curriculum.*

An excellent book on high school curriculum making.

Williams, L. A. "Analysis of Techniques in Curriculum Making" in *School Review*, June, 1935.

CHAPTER XVI

CLASSROOM ORGANIZATION AND CONTROL

The necessity for organization. All educational practices and relationships must depend for their final justification upon their advantage to the child. His development and educational progress must be the constant focus and point of reference, but the learning adjustments which constitute progressive growth and mastery require the stimulation of appropriate situations. In order that the total environment, physical and social, may be made to provide, as continuously as possible, a sequence of desirable and effective influences and factors favorable to the ends sought, some form of well-considered organization is essential. From the standpoint of health, normal development, and general well-being, the biological factors involved require careful attention. It is obvious that the classroom group is in itself a miniature society, in which varied social relationships are encountered and out of which influences of critical importance will come. The psychological significance, also, of a type of organization which minimizes distractions and friction, while providing wholesome stimulation to mental activity, is readily apparent. All of these phases of the management, control, and organization of the classroom merit rather detailed examination and appraisal because of their bearing upon a philosophy of educational practice.

The physical features of the classroom. In view of the fact that the classroom is a place both for living and working, there are two important questions to ask regarding its physical features. Is it a comfortable, hygienic room in which busy children may spend several hours each day without danger of eye-strain, undue fatigue, annoying distractions, or influences unfavorable to general health? Is it also a convenient place for work and activity, equipped with facilities for appropriate investigation and consultation, and adapted to constructive group enterprises? Adequate answers to these apparently simple questions involve considerations also as to the whole philosophy of educational procedure.

The essential requirements as to lighting, seating, ventilation, sanitation, and comfort of the classroom have been subjected to scientific study, and ample authoritative data on these points are available in any modern volume on school hygiene. It is our responsibility in this discussion not to repeat or summarize these facts, but to emphasize the obligation on the part of everyone who has any share in directing or planning classroom conditions to be accurately informed upon such matters, and to see that these requirements are met as fully as circumstances and resourcefulness make possible. Certainly no phase of organization and procedure is of sufficient importance to justify neglect of any condition which may jeopardize the physical efficiency of the pupils.

Closely related in importance is the question of the utility of the classroom, and its appropriateness for modern educational activities. The hygienic features, previously emphasized, naturally are conducive to good working conditions, but well-planned arrangements go much beyond these. Learning is an active process, and facilities must be favorable for investigation, construction, experimentation, and conference. Reference books and materials should be made easily accessible. A work table, around which a group may assemble for planning and study should be part of the equipment. In order that the pupils may consider such a place their "workshop," it is well to encourage them to bring supplementary material of their own. Out of such pooling of reference material there may naturally develop a sort of circulating exchange of scientific, literary, and current-interest publications with the school as headquarters and clearing-house. The type of first-hand investigation which this fosters, the spirit of social co-operation, and the stimulus to comparison and evaluation of data, all are highly desirable influences. Adjacent space and equipment for project construction are desirable, but if the school does not possess these advantages, the idea suggested in the co-operative reference table may be applied in the improvisation of fair substitutes. The essential element, from the standpoint of a philosophy of education, is the conception of the classroom as an informal environment for varied activities in which a resourceful teacher and interested pupils contrive the setting for genuinely educational experiences.

The school as a social unit. Next to the home, the school constitutes for the child his most intimate and influential social unit. In it he encounters organized social life and its essential relationships. He finds there an authority established for social control, with its system of recognitions, rewards, and punishments. From his experiences with such authority he is inclined to the conviction either that established authority in general is a friendly guardian, designed to protect the individual in the enjoyment of his rights and privileges, or that it is a meddlesome, arbitrary imposition, always to be regarded with suspicion if not with more or less direct hostility. Lasting influences are being established also relative to such social items as co-operation, group loyalties, justice, courtesy, fair play, obligations of leadership — all these and more, not so much through direct teaching as through the experiences of school life which involve these relationships under favorable or unfavorable conditions. As a representative social unit the school can, through its type of organization, demonstrate the advantages and responsibilities of democracy, or present an autocratic sham masquerading as a preparation for democracy. It is peculiarly true, in a social sense, that children are learning by living, and, as participants in the miniature society represented by the school, are being fashioned, well or badly, for their part in the great society of life.

In view of the inescapable responsibility which thus is inherent in the classroom organization, it constitutes a searching test of the teacher's educational and social philosophy. He may, of course, insist that his sole obligations are to keep order and to teach school, thus employing a traditional gesture of pious self-deception. Not only are the social attitudes of pupils fundamentally influenced by the relationships and spirit which actually prevail in the school, but the teacher is betraying also his inadequate conception of realities by what he ignores or seeks to evade. Only by a courageous, constructive acceptance and fulfillment of this responsibility can the teacher hope to have wholesome influences attending the formative years of social development for his pupils.

Constructive social control. An important goal of education, from a social viewpoint, is the intelligent acceptance, on the part of the pupils, of the essential features of democratic institutions and relationships. This implies, also, a sympathetic interest in their progressive improvement based on a critical study of needs in the light of changing conditions. Such attitudes cannot be assured through mere factual instruction under imposed discipline and observances. They must grow out of satisfactions felt by the pupils during their experiences as participants in the organized life which they encounter and of which the school provides the major part. It is the function of the school and the classroom organization to provide favorable opportunities for such satisfactions, along with practice in sharing the responsibilities that attend real membership in a democratic society. These considerations suggest the general outlines characteristic of good modern school organization.

It is well to keep always in mind that classroom organization is, after all, primarily a means to an end, even when it is providing valuable experiences. Especially is it true that its forms are best accepted and comprehended by children when these are recognized as ancillary to the attainment of more directly desired ends. Consequently the socialized recitation and the voluntary co-operative activities which develop from it furnish the natural center and stimulus for the general organization. As soon as the pupil has accepted some share of the responsibility for the successful accomplishment of an interesting group enterprise, he is prepared to realize the necessity for assignment of authority and for agreement as to direction and co-ordination. On such a basis of mutual interest and mutual understanding can be built a type of classroom organization, sufficient to maintain effective working conditions and at the same time democratically resting upon the consent of the governed. The extent to which the pupils find in such an organization a trustworthy guarantee of justice and stimulating opportunity, meriting their whole-hearted acceptance, is, within reasonable limits, a fair measure of the teacher's social understanding and leadership.

Violation of established order. Even with the best organization there will be occasional conflicts and violation of rights, for children have human frailties. Such cases of wrongdoing should receive very careful study by the teacher, as it is far more important to discover and correct the cause of the infraction than it is merely to "get order." The misconduct upsets working conditions and must receive attention and regulation to the extent that work may again proceed, but this same misconduct has value for the thoughtful teacher as a symptom, suggesting needed adjustments on the part of the offender in his attitude toward his work, toward authority in general, toward the group, or toward the teacher in particular. Good teaching must be adapted to the needs of the pupil, evealed in this case by his deficiencies in behavior. A teacher vhose pupils had made certain errors in an arithmetic test would hardly be satisfied with insisting that the correct answers be substituted so that the paper might look as it should. Instead, the teacher would carefully examine the errors in the hope of discovering wherein the teaching has been ineffective, or what other causes underlie the shortcomings. The same philosophy should be developed with regard to the errors of pupils in conduct.

The functions of punishment. When circumstances require that corrective measures be taken, it is especially important that the social aims of education be kept clearly in mind. When punishment seems necessary, it has, as a social corrective, two functions. The first is immediate and involves the restoration of order, along with such necessary readjustments as will permit the speedy re-establishment of satisfactory working conditions. The other looks to the future and to the permanent effects of the child's reaction to the punishment. In this latter function, the punishment must be so chosen and administered as to leave the child more kindly disposed toward authority and more capable of self-direction in moral social conduct. The experience should leave the pupil with strengthened self-respect and a desire to maintain it. Although punishment, to be effective, must put an end immediately to the objectionable conduct which occasioned it, this result alone is not always commendable. Too often such an end is attained at the price of resentful and secretly rebellious attitudes among the pupils. The studies made in reform schools as to causes and first steps in delinquency furnish startling evidence as to the results of such bungling in school discipline. In fact there is no more severe test of teaching ability than in the delicate matter of administering punishment so as to make it serve the best educational ends.

The administration of punishment. Many of the difficulties which occur in this connection are due to the fact that what is punishment for one pupil is not real punishment for another, and what is punishment for a certain pupil at one time is not punishment for the same pupil at a different time. The most essential element in punishment is the recipient's mental reaction, which does not necessarily correspond to the degree of physical discomfort suffered. Boys in their sports, and girls in their elaboration of the prevailing styles, endure willingly, or even with mental elation, more severe or prolonged physical discomfort than that involved in any modern school punishment. Whenever a pupil is able in any way to pose as a martyr, or to assume any distinction from the character or frequency of punishments received, the effect is worse, if possible, than the rebellious and resentful attitude previously deplored.

Although these restrictions may seem to make the proper imposition of punishment almost impossible, a real teacher-leader does not usually find the task extremely difficult. He knows that such considerations as "making it hot for the offender," "vindicating the teacher's authority," or relieving the teacher's feelings are all of secondary importance to bringing about a change in the wrongdoer's attitude toward the rights of the group and toward the established order which he has violated. Until the offender has admitted the error of his behavior and recognized his duty to atone for it, all so-called "making amends" is a forced and insincere proceeding. The first step, then, is one of teaching, of leading the pupil to examine his offense from the standpoint of the school as a group and to see how it violates the rights of others or interferes with the proper work of the school. When a pupil has admitted this, he must also acknowledge that he has, by his offense, forfeited his privileges as a member of the group until he rights the wrong and furnishes acceptable guarantees against its repetition. This method of approach sometimes requires patient, earnest effort, but it is the only way to reach the basis of the difficulty and to correct or prevent a wrong attitude.

Most cases of misconduct arise from a spirit of mischief or from thoughtlessness, and these respond readily to a considerate treatment which stimulates a more social viewpoint.

The selection and details of a penalty, after the preparation discussed above, may well be a matter for further study by the pupil himself. The question is, What penalty will atone for the wrong done, and at the same time be an effective deterrent against further infractions? The pupil himself should be the one best qualified to know the answer to at least the latter part of that question, and, if he has agreed that his behavior merits such a penalty, he will derive double benefit from one which he has helped to select and which he has promised will be effective. In this way, punishment becomes almost self-administering. It is no longer a battle of wits and endurance, with pupil arranged against teacher in a contest which adds a sporting zest to misconduct. Our best juvenile court judges have demonstrated the efficacy of this method, even with boys that the schools have given up as incorrigible. To be made a partner in his own reformation holds a powerful appeal to a boy's instinctive sense of honor and group loyalty, and tends to develop the qualities of responsibility, good-will, and self-direction upon which good citizenship rests.

The reader may wonder at the extended space given to this discussion of punishment and the correction of unsocial behavior. Nothing in this chapter is more fundamental in its bearing upon the teacher's philosophy of organization and control. It may fairly be said that even a military type of discipline can be made reasonably acceptable, if sympathetic understanding is used in dealing with infractions, while the most democratic and commendable plan of informal organization can be wrecked by a lack of earnest and firm treatment for those inevitable violations which challenge the stability and vitality of every social organization.

Self-government. In the preceding paragraphs there has been suggested a very real kind of self-government, one in which each pupil undertakes to direct and correct his own behavior according to the best interests of his group. Plans of general organization in which pupils are expected to govern each other require careful supervision, and are of doubtful value in the light of the effort required to maintain them. Immature children are hardly able to keep personal considerations from influencing their judgments unduly, and are incapable of the constructive teaching which should be a part of such control. Since the leadership in such so-called pupil government must be supplied, directly or indirectly, by the teacher whom the community holds legally responsible for school control, it is usually better to retain frankly that control, rather than carry on the difficult fiction of pupil government. The latter form has, however, a legitimate use as an occasional demonstration and recognition of high morale, and the stimulation of the special event, combined with wise direction, can make it a valuable expedient for impressing certain phases of citizenship. As a regular thing, the pupils can get their experience in the responsibilities and problems of group control most satisfactorily through school clubs, group projects, and similar subordinate activities, where mistakes, or even failure, may imperil the particular undertaking without seriously affecting the general school organization.

Organization must be adaptable. It is the province of this discussion to indicate the basic principles which should underlie schoolroom organization, rather than to specify the particular form which such organization should take. The latter should vary with the age and maturity of the pupils, the size of the group, and the social conditions to which the pupils have been accustomed; but the prevailing characteristic, amounting to a fundamental principle, should be adaptability. No favorite type of organization should be allowed to become so dominant as to hamper in any unjustifiable way the attainment of desirable purposes. It is an evidence of superior teaching to find in any classroom the organization becoming progressively informal as the pupils develop better social attitudes and come to a fuller understanding of social responsibilities. For the teacher to strive toward such an objective will provide the best safeguard against a static and overemphasized form of organization and control, and will be likely to assure recognition and encouragement of progress and growth toward a more truly democratic assumption of social responsibilities by the pupils. Above all, it should be reiterated, as a final summation of emphasis, that the child's social judgments are primarily influenced and colored by his experiences and daily contacts with organized social life, and that the school, as an important unit and exemplar of society, has an incomparable opportunity to make those experiences the means of inspiring the good-will and loyal participation essential to the realization of our social ideals.

TOPICS FOR DISCUSSION

1. To what extent should organization and control in the schools of a democracy differ from that appropriate under other forms of government?
2. Show how the broader objectives of education have operated to emphasize social education, rather than "discipline," as the main purpose of classroom organization and control.
3. Describe the different valuable results that may be achieved by inducing an offending pupil to co-operate sincerely in the selection of his own punishment.
4. There is a general tendency to reduce the amount of mechanical routine in the management of classroom activities. For the sake of effective work, what limits should be set to this informality?
5. Enumerate the important characteristics of what you regard as the best attainable relationship between teacher and pupils in the classroom.
6. In what respects is the opening day the most important one of the school term?
7. What conditions in the classroom are essential to the success of a socialized recitation?

8. What was the weakness of traditional methods of maintaining "discipline" from the standpoint of developing moral social conduct?

SUGGESTED EXERCISES FOR STUDY AND DISCUSSION

1. Rank the following routine matters in order of their educational value:

—— Blackboard work
—— Caring for wraps
—— Communication between pupils
—— Entering and leaving room
—— Fire drills
—— Flag pledge
—— Handling materials
—— Orderliness
—— Class transitions
—— Using references

2. Indicate whether the following punishments are proper or improper, and verify. Use P and I.

—— Apology before the class
—— Corporal punishment
—— Enforced idleness
—— Expulsion
—— Isolation from others
—— Keeping after school
—— Loss of privileges
—— Lowering scholarship grade
—— Notifying parents
—— Personal indignities
—— School tasks
—— Scolding
—— Sending home
—— Serious talk
—— Solitary confinement
—— Suspension
—— Threats, ridicule
—— Rebuke
—— Reproof
—— Restoring damage

3. Rank the following in order of seriousness, and verify:

—— Cheating
—— Fighting
—— Disobedience
—— Gambling
—— Lying
—— Impertinence
—— Stealing
—— Truancy
—— Vandalism
—— Vulgarity

4. Indicate the best response, and verify:

—— The most basic cause for infractions of discipline is (1) bad associates (2) bad home conditions (3) lack of training (4) natural tendencies (5) poor school conditions (6) poor teaching (7) unsocial pupil

—— The most drastic corrective method of dealing with an offense is (1) appeal (2) admonition (3) infliction of pain (4) instruction (5) suspension

5. Indicate whether these statements are true or false (verify):

T. F. Conduct is controlled more by ideas than by habits.

T. F. The behavior learning process is different from other learning.
T. F. Teachers and mental hygienists agree regarding the seriousness of specific behavior difficulties.
T. F. Self-government is the highest type of government.
T. F. School organization is a part of school discipline.
T. F. Teachers govern best when they do not seem to govern.
T. F. School discipline values are transitory.
T. F. Conduct is learned through the law of effect.
T. F. Self-direction is the goal of education.
T. F. Fear and repression should be used in punishment.
T. F. The necessity for organized routine decreases with the size of the school.
T. F. Building up a good school spirit is a preventive method of discipline.
T. F. Keeping everyone busy is a corrective method of discipline.
T. F. As few school activities as possible should be routinized.
T. F. The habit of obedience to authority should be stressed.
T. F. Boys commit fewer infractions of discipline than girls.

SELECTED REFERENCES FOR ADDITIONAL STUDY

Almack, J. C., and Lang, A. R. *The Beginning Teacher,* chaps. III, IV, V, X.

Presents in simple manner the essentials of organization and management.

Gist, Arthur S. *Clarifying the Teacher's Problems,* chaps. IV, XIII.

Very practical suggestions, with examples.

Harris, Pickens E. *Changing Conceptions of School Discipline.*

Traces the development of modern social viewpoint in school management.

Monroe, Walter S., *Directing Learning in the High School,* chap. XI.

Good discussion of the problems of classroom management in the high school.

Pulliam, Roscoe. *Extra Instructional Activities of the Teacher.*

Comprehensive treatment of factors upon which favorable learning conditions and relationships depend.

Sears, Jesse B. *Classroom Organization and Control.*

Not recent, but still one of the best discussions of the values and principles that should determine various phases of organization and management in the school.

Thomas, F. W. *Principles and Technique of Teaching,* chap. V.

Concise analysis of factors controlling effective working conditions and classroom morale.

CHAPTER XVII

INDIVIDUAL DIFFERENCES

Understanding the individual pupil. The teacher's practical philosophy of education will be quite incomplete unless in it the importance of the individual pupil stands out vividly in bold relief. All that pertains to the field of education — everything that has been discussed in this book — must be evaluated and interpreted in terms of behavior modifications produced in the learner. The institution of the school has been established in order to facilitate the individual's educational pursuit. Educational aims are proclaimed by social groups for the purpose of providing objectives toward which learning activities are to be directed. Teacher training is required so that the pupil may have more capable and more competent assistance in the getting of an education. The excellence of textbooks and other educational equipment must be judged by the criterion of helpfulness in the learning process. Methods of instruction and supervision, school organization and administration, curriculum, classroom organization and control, and all other phases of the educational system must, in the last analysis, be evaluated on the basis of their beneficial influence upon the pupil's learning process. The individual pupil is, then, the measure of all things in education, and an understanding of him and his nature is imperative.

The common human properties of educational significance were discussed in the part of this book dealing with the biological and psychological bases of education. Although human beings have much in common, yet each individual is unique and possesses his own physical, mental, and temperamental idiosyncracies. The differences which distinguish a particular pupil from others are educationally important, and must be recognized and utilized by the teacher. An understanding of the pupils with whom the teacher is associated resolves itself largely into the problem of individual differences.

Individual differences. In the discussion of biological variation in Chapter V, we noted the common tendency for the characteristics of offspring to diverge from those of their parents. Variation tends to occur among all individuals in all traits possessed. Many of the differences may have little or no apparent educational significance, while some such as endurance, mental capacity, quickness of thought, reaction time, strength of emotions, functioning of the endocrine glands, and the like are obviously of utmost importance educationally. Individual differences not only appear to be a universal characteristic, but they seem to distribute themselves in a normal and predictable manner. A study of the reproduction process and the laws of heredity reveals the naturalness of innate differences and their distribution, and indicates the unreasonableness of expecting any persons, except identical twins, to have exactly the same heredity or to be alike innately. Innate biological differences must exist in every group.

Besides the inborn variations there are many individual differences among human beings which are acquired from contacts with dissimilar environments and through varying responses to apparently similar situations. Some of these acquired differences may be unimportant in the educational process, but others, such as interests, purposes, dispositions, achievement, industry, ambitions, ideals, character, and the like, are very important. Knowing that individuals are not and cannot be alike and that learning is an individual process, it is unpedagogical, unjust, and undemocratic to treat them as though they were alike. No teacher can ignore or avoid the existence of individual differences. Each particular pupil is a distinct personality and must be handled as such.

Measuring individual differences. Differences have been found to be distributed among individuals in a certain regular and predictable manner, best described in terms of the bell shaped normal curve given on page 87. Accumulated measurements show that, for a given trait or ability, most individuals tend to cluster around an average. Others deviate in both directions from this large average group, and in gradually diminishing numbers. In consequence, fewer and fewer individuals are found in the commonly possessed trait as the differences become more and more extreme. Even in a so-called homogeneous group where the individuals appear to be alike, the variations are of the same general nature but of course with a more restricted range than in a heterogeneous group. The measuring of individual differences therefore consists of determining, for a particular person, the amount of his deviation from the average of the group of which he is a member. Out of this the modern philosophy of educational measurement has been evolved. We know theoretically what variations should be expected in a given group, and by proper testing we can determine who the variants are and the extent of their respective divergences.

The average then, as indicated above, is taken as the norm, and by this standard individuals are compared and their differences are measured. In mental-ability testing, for example, a norm has been established for each chronological age, making it possible to determine a pupil's level of ability in terms of mental age. By dividing this mental age by his chronological age the individual's rate of mental development in terms of intelligence quotient (I.Q.) becomes known. On the basis of deviation from the normal intelligence quotient the individual may be classified in such a general type as genius, near genius, superior, average, dull, moron, imbecile, idiot. In a similar way the individual's age and quotient can be determined for reading ability, arithmetic accomplishment, general achievement, or any other measurable trait. Many individual differences of a social, emotional, and personality nature are rather intangible, and cannot as yet be measured in an objective fashion. These the teacher should attempt to isolate and estimate, with good judgment, and only after the most careful observation and study.

Significance to education. The significance of individual differences to education has long been recognized. Plato made extensive provisions in his educational plans for variations in native ability, and many other keen observers from Plato's time on to the present day have recognized the importance of individual differences and have given them consideration in their philosophies of education. The extensive experimental work, beginning with Galton and carried on down to the present time, has so increased our knowledge concerning individual differences and so enhanced their significance to education that their existence and importance are now a matter of general acceptance. With all of our accumulated knowledge and theories, however, and with all of our consciousness of their existence and importance, the practical instructional problem of individual differences has become increasingly complicated and involved through the rapidly growing magnitude of mass education, the wide extensions of compulsory school attendance, the modern tendency to remain in school during the adolescent period and to continue on into college, and the economic necessity of dealing with large instructional groups. Obviously the heterogeneity resulting from all this increases the significance of individual differences to education.

Despite the foregoing, instruction has been directed in the main almost exclusively toward the large middle group, and with but slight attention being devoted to individual differences. The little attention which has been given has consisted largely in attempts to bring laggards up to average. The superior pupils have tended to be neglected and allowed to shift for themselves, since they easily met the mediocre standard set for all. The resulting lock-step procedures in classification, curricula, scholarship-marking, promotion, and instruction could lead only to discouragement and failure for some, inertia and indolence for others, and mediocrity and educational waste for all. If each pupil is to be reached and benefited by the teacher, there must be a genuine and active recognition of individual differences not only in native ability, but also in interests, purposes, vocational choice, special aptitudes, previous achievements, dispositions, and the like. Individual differences are highly significant to education, and their recognition is basic to effective teaching.

Providing for individual differences. During the past fifty years various schemes have been advanced for ameliorating the problem of individual differences. Most of the earliest of these were simply modifications of the traditional classroom procedure in the way of more frequent promotions, special coaching, elastic assignments, ability grouping, and a combination of the foregoing. Semiannual and sometimes quarterly promotions replaced the old annual plan. This reduced the unit of work which "failures" would be required to repeat at a time. The early Elizabeth and Pueblo plans were devised to avoid failures by allowing each pupil to proceed at his own speed. In the Batavia and Mount Vernon plans failures were reduced by the special coaching of laggards. The early North Denver scheme was the reverse of this in that it provided special teachers to look after the bright pupils who were being held back by the group. The gifted pupil was also recognized in the Cambridge and Portland systems, where parallel six-year and eight-year courses were provided with a number of transfer points.

The above plans and some of the later ability-grouping systems were based upon the false assumption that all pupils could and should do the same work, and that the solution of the problem was largely one of speed variation and special coaching. Such adjustments were of course vital in view of the fact that the best 10 per cent of a typical class will proceed from two to four times as fast as the poorest 10 per cent, and at the same time do their work much better. Varying speed and special coaching, however, do not touch the whole problem. The early Santa Barbara and Baltimore plans went a step further and provided a curricular differentiation for the slow, average, and gifted pupils in the first six years of the elementary school, and promotion by subject beginning with the seventh grade. All of these modifications of classroom procedure made valuable contributions, and were important evolutionary steps toward the practical solution of the problem.

More recently plans have been inaugurated which abandon class organization and provide a maximum of individual instruction. While the early Elizabeth and Pueblo systems tended in this direction, the present Winnetka and Dalton plans represent reorganizations of the more radical type. By the Winnetka plan, which is an adaptation of an earlier San Francisco venture, the skills and common facts are acquired individually and socialization is stimulated by miscellaneous group and creative activities. The more widespread Dalton plan is essentially a laboratory method whereby each pupil above the third grade covers the fundamental work in the form of study contracts, which may be fulfilled at such time and as rapidly as the pupil desires. By this scheme socialization takes place through co-operative group study. Both plans abolish daily assignments and class recitations, but each stresses individual achievement tests. While both of these plans are generally looked upon as experiments, they are stimulating and indicate a long step forward over the first adjustment attempts. It should be noted that with the great masses attending college in recent years, the problem of individual differences has now reached up and become a matter of vital concern at the college level as well. As a result, interesting and promising college experiments and reorganizations are being undertaken at several institutions of higher learning. Among the most noteworthy of these are the University of Chicago, the state universities of Wisconsin and Minnesota, and Swarthmore, Rollins, Colgate, and Olivet Colleges. While reorganizations (elementary, secondary, and college) can facilitate and encourage the meeting of individual differences, the real solution lies in the teacher himself and his instructional philosophy.

Factors contributing to individual differences. The teacher's instructional philosophy should include a general understanding of the fundamental factors contributing to individual differences, the manner in which they tend to condition instruction, and their most probable importance to educational procedures. The factors which are commonly designated as causative of individual differences are sex, race, maturity, family, and environment. The relationship between these factors and the innate and acquired differences among human beings are so involved and interwoven that any one factor cannot be completely isolated and its influence alone determined; but, with due allowance for the overlapping and interaction, each of these may be advantageously placed by itself for purposes of emphasis and discussion.

The factor of sex. It is out of the modern American policy of coeducation that the chief educational interest in individual differences due to sex arises. For centuries the man-centered world limited educational opportunities to males, the status of women being relative to man's welfare and happiness. The Old World still looks with disfavor upon the idea of having both sexes taught in the same classes. Custom and prejudice are against it, and there exists the opinion that women do not have the physical strength or the mental capacity to compete with men. In American mass education it was at first a matter of economic necessity to teach boys and girls together, regardless of any fundamental beliefs on the subject. The United States has now come to be unique in the extensiveness and the democracy of its coeducational system, and has definitely adopted coeducation as a sound educational principle. In this it is not assumed that there are no sex differences to be considered, and that boys and girls should receive precisely the same education in exactly the same way, but rather that the predominant likenesses between the sexes justify their being together in their school-work with such adjustments being made as any special sex differences may warrant. It is in making the necessary modifications in coeducation that a knowledge of the possible sex differences is required by the teacher.

While the male with the somewhat heavier brain was once thought to be the more intelligent of the two sexes, modern experimental studies reveal no marked sex differences in native mental ability. Such divergences as sometimes appear in the general average and the variability of capacity between the sexes are considered of doubtful reality, and are perhaps due to some fault in the measurement technique or to some subtle selective element in the tested groups. At any rate, such intellectual variations as might exist between the sexes are far exceeded in extent and importance among members of the same sex, and as such are likely to be due more to training and social influences than to original nature. No distinction, then, in intellectual abilities on the basis of sex alone is necessary or possible. Some modification in class, play, and social groups should, however, be made after the period of childhood, because sex differences in such matters as tempo of physical development, with the earlier onset of adolescence for the female and its accompanying interests and motivations, the structural and functional peculiarities of each sex, the vocational possibilities, and the biological and social responsibilities and requirements all seem to require it.

The factor of race. The American population is made up of a heterogeneous mass of peoples drawn from all over the world. While the inhabitants in most sections of the United States are predominantly white, there is a widespread sprinkling of the black and yellow-brown races, and in some parts the blacks are found in relatively large numbers. There are intermingled among the white stock the Celtic, Mediterranean, Semitic, and Teutonic branches with their various divisions and nationalities. In this social melting-pot of the world the children of all racial groups come together for instruction and assimilation under the influence of the public school. Some classrooms have enrolled a great cosmopolitan mixture of the races of mankind. The American teacher should therefore be informed about the bearing of the racial factor upon individual differences.

Where the most marked physical differences appear, as between the whites and the blacks, the most obvious mental differences should also be expected. The results of mental tests do show that the intelligence quotients of Negro children average lower than those of white children. The extent to which this difference is due to racial native ability, or to experience and the nature of the test, is unknown. At any rate, the individual differences within each race are so much greater than the differences between the races that no instructional distinctions need to be made upon the basis of race alone. The overlapping of abilities between any two races is exceedingly great. Innate mental differences among the white nationalities are less than between the whites and either the blacks or the yellow-browns. Added to the closer original relationship among the whites has come the intermixing which has perhaps eliminated any really pure racial blood. In general it may then be said that innate differences in learning ability due to race alone seem to have no great educational significance. In this it is similar to the factor of sex.

The factor of maturity. Unlike either sex or race, the factor of maturity in individual differences is educationally important. Chronological age has long been taken as the index of maturity, and there is as a general rule a close relationship between the two. Because of this an effort has been made in school organization and administration to keep together pupils of the same chronological ages for instructional purposes, and educational retardation and acceleration are usually thought of in terms of age-grade discrepancies. At the age of six children are regularly admitted to the first grade of the public schools and are expected to progress normally a grade for each added year, and to complete the elementary, secondary, and college divisions of the school system at certain established ages. That individual growth and development up to maturity is closely related to chronological age should be accepted as the fundamental concept. Up to the age of about sixteen growth in mental capacity seems to parallel physical development, at which time native mental ability seems practically to reach its maximum. The gradual changes in an individual during the years of childhood and adolescence are educationally significant, and deserve the most careful attention in instructional and classification procedures. Chronological age itself ceases to be a major factor after maturity. Recent experimentation has shown that adults can pursue study and learn effectively well into the life-span. Decline in learning ability due to age seems not to set in before fifty, and in many cases not until the most advanced years. Chronological age, however, provides but an expectancy, and variations among individuals of the same age require additional consideration.

While age may in general be taken as a standard for expected maturity, there is in fact a wide variation in growth and development among individuals of the same chronological age.

Consequently it has become rather common and quite necessary to speak of an individual's anatomical, emotional, mental, pedagogical, physiological, and social ages separately from the chronological. While physical size *per se* has no educational significance, the height and weight of a maturing individual has been found to be a much better criterion of the degree of maturity than chronological age. Variation in physiological developments, especially in the functioning of the endocrine glands, is of much educational importance. Relatively little, however, is as yet known in this challenging field. Good measurements of differences in emotional and in social traits are still largely undeveloped, although much attention is being given to this problem. Mental age can be determined by intelligence tests, and pedagogical age by standardized educational tests. The relation of these ages to chronological age is important, and is adequately described in terms of intelligence and scholarship quotients. Such information is of utmost importance in instructional plans and procedures.

The factor of family. The bearing of near ancestry upon individual differences was discussed on pages 89–90, in connection with biological variation. The work of Galton, Mendel, Pearson, Morgan, Jennings, and other students of genetics has contributed much to the educator's understanding of this important factor. Much of the variation in native mental capacity is directly traceable to family inheritance, and is adequately explained by the gene theory. The significance of the gene theory of heredity is indicated by the following quotation:[1]

> The gene theory of inheritance offers an explanation of: (1) the diverse character of intelligence; (2) the breeding of feeble-minded by feeble-minded; (3) the small percentage of normal offspring of mentally deficient parents; (4) the de-

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[1] Freeman, F. S. *Individual Differences*, p. 74, footnote. Henry Holt and Company, 1934.

ficient progeny of one deficient and one normal parent; (5) the frequency of mediocre children from mediocre parents; (6) the breeding of superior children by "average" parents; (7) the breeding of inferior children by "average" parents; and (8) the frequency of eminence of superiority in certain families.

The factor of environment. The *external* conditions, influences, and forces affecting the life and development of an organism compose one of the major factors in individual differences. Mental development can no longer be looked upon as an innate unfoldment, merely helped or hindered by the external surroundings. The environment is a necessary condition — an integral part of the developmental process. The factor of environment begins to operate before birth, and continues throughout the life-span. Biologists find that the immediate environment of the embryo is involved in the earliest stages of its development. During the ultra-impressionable period of infancy and childhood many of the individual's traits are deeply and firmly formed by the material and social surroundings, and "to the manner born" tends to leave its lifelong earmark.

Differences in achievement and performance vary with the mental stimulus of the social environment. It is through variations in environment, and not in innate aptitude, that many of the differences among races and between sexes are acquired. The members of each race are characteristically patterned after and hemmed in by their aggregate surroundings. Books, climate, community life, culture, communication, customs, diseases, food, home, religion, teachers, vocations, and the like all play a vital part in individual differences. The same is true also at the various social and economic levels within a nationality. We tend to become a part of all that we have met. The members of each sex acquire the traits which society sets up as appropriate to them, but, as with any acquired trait, there is much overlapping between males and females in the possession of the traits of masculinity and femininity. Cattell, in his studies of the influence of social heritage upon American men of science, found that the main factors in producing intellectual performance seem to be density of population, wealth, opportunity, institutions, and social tradition and ideals. From all this it must be concluded that individual differences due to environment have important educational implications demanding the teacher's understanding and attention.

Special abilities. Every teacher has from time to time certain pupils who seem to possess unusual abilities in some special field of activity. This may be superior excellence in arithmetic, graphic arts, language, mechanical arts, music, or some other field of activity. Uncommon accomplishment in these fields has sometimes been mistakenly considered the result of some special "gift" or inborn talent. Psychologists no longer accept the theory of innate types — the doctrine of compensation, the supposition that individuals are born "long" in some traits and "short" in others. Modern investigations indicate that good traits tend to combine in the same individual, and to be highly correlated with general intelligence. An individual's special ability is, then, due to the specialized training in the trait to which he has devoted himself, while other initially equal possibilities have been neglected. Given high intellectual capacity, special interests and abilities are acquired through the force of circumstances, the favorableness of surroundings, and specialized instruction under competent instructors. Even though some innate factors may be involved in music and the graphic arts, any outstanding achievement beyond mere mechanical competence is dependent upon general mental capacity and proper environment. Individuals with the highest intelligence quotients are potential geniuses in many different fields of activity, depending upon the influences and opportunities of the particular environment with which they happen to come in contact. This concept of special abilities is important in connection with the problem of educational and vocational guidance.

Emotional and temperamental differences. The difficulty of isolating and measuring emotions, temperaments, moods, personality traits, and social attitudes is clearly evident. Yet every teacher knows that striking individual differences exist in these elusive and complex feeling processes, and that their recognition is of utmost importance in teaching and in counseling individual pupils. Attempts are being made to measure some of these personal characteristics in an objective manner, and teachers should be familiar with these endeavors and their results. In the main, however, the teacher will have to rely upon his own keen observation, sympathetic understanding, and good common sense. The classical division of temperaments — the predispositions to certain emotional tones — into choleric, melancholic, phlegmatic, and sanguine types has little more than suggestive value, since it oversimplifies the situation and ignores the vast overlapping among them. Present knowledge of individual differences tends to nullify the theory of types, and it is the variant and not the type that we are concerned with anyway.

Our knowledge of the causes of individual differences in emotional and temperamental traits is also meager and unsatisfactory. The little that is known, however, is extremely significant. Heredity enters in, but much depends upon the factors of environment, training, and physical condition. Emotional differences between the sexes are partly due to differences in the functioning of the endocrine glands, and partly to variations in social stimuli. Age, and especially the period of adolescence, seems to be a factor in emotional status. The functioning of the glands, the nutritional processes, and the important bodily organs seem to influence temperament. The condition of the nervous system, the dynamic co-ordinator for all parts of the body, plays a basic part. The individual's social environment and treatment, censure, criticism, derision, disparagement, domination, faultfinding, nagging, sarcasm, scolding, teasing, threatening, worrying, and the like are all conditioning factors to be recognized and dealt with. An understanding of emotional and temperamental differences among individuals, and a sympathetic attitude toward eccentricities and idiosyncrasies, are indispensable to successful instruction, counseling, and mental-hygiene work.

TOPICS FOR DISCUSSION

1. Why has the increased use of standardized measurements, with corresponding influence upon methods of teaching, made more necessary a sound philosophy of education?
2. Account for the fact that problems in discipline are generally occasioned by unusually bright or by unusually dull pupils.
3. Wherein is the familiar claim of "treating all pupils alike" usually both untrue and unjust?
4. What kinds of individual differences between pupils have been most generally neglected in adapting school procedure? How do you account for this delayed recognition?
5. Point out, with your reasons, what you consider the greatest weakness in the Winnetka plan of individualized instruction.
6. In what ways can reasonable adjustments for individual differences be made without sacrificing the benefits of group co-operation in the learning experience?
7. What dangers are there in advancing bright pupils into grades where the other pupils have greater age and social maturity?
8. What justification is there for the charge that, in the average school, greater injustice is done the bright pupils than the dull ones?

SUGGESTED EXERCISES FOR STUDY AND DISCUSSION

Indicate whether these statements are true or false (verify):

T. F. The existence of individual differences is a modern discovery.
T. F. The genetic theory facilitates an understanding of individual differences.
T. F. The normal curve of distribution provides a useful concept.
T. F. It is impossible to isolate the nature and nurture factors.
T. F. It is a good policy to treat all pupils alike.

INDIVIDUAL DIFFERENCES

T. F. Educational measurements usually ignore individual differences.

T. F. Several factors have increased the heterogeneity of the American school population.

T. F. American education tends to destroy mediocrity.

T. F. Dull pupils should be given precedence in providing special instruction.

T. F. "Average" pupils give the most disciplinary trouble.

T. F. A pupil's relative standing on a test should be kept from him.

T. F. Differentiation of courses on ability basis harmonizes with democratic ideals.

T. F. All education is fundamentally individual.

T. F. Irrespective of ability, everyone should be given a high-school education.

T. F. Individual differences have influenced administrative practice.

T. F. To provide education for mental defectives is a social mistake.

T. F. Individual differences are now adequately recognized in the public schools.

T. F. The youngest pupil in a class is likely to be the brightest.

T. F. Most early promotional plans were based on a false assumption.

T. F. Some universities are attempting to meet the problem of individual differences at the college level.

T. F. There is scientific evidence of the male's innate superiority in mental ability.

T. F. Some educational adjustments on the basis of sex are necessary.

T. F. Coeducation can be justified only upon economic grounds.

T. F. There is an overlapping between the sexes in the traits of masculinity and femininity.

T. F. Pure racial stocks are a rarity today.

T. F. Racial differences in mentality are largely biological.

T. F. There is a large overlapping between blacks and whites in mental ability.

T. F. Chronological age should be the *basic* criterion of classification in school.

T. F. The educational significance of physical size has been understressed in public school practice.

T. F. There is a tendency to begin formal education too early.

T. F. Thorndike's adult learning studies are discouraging for the adult education movement.

T. F. Adult education involves both psychological and sociological factors.

T. F. The same thing is meant by quantitative and qualitative differences.

T. F. Potential and effective intelligence mean the same.

T. F. Family is a significant factor in individual differences.

T. F. The relative effects of biological and social heredity are unknown.

T. F. Environment influences moral more than intellectual differences.

T. F. Man's maximum learning capacity is unknown.

T. F. Learning increases further capacity for learning.

T. F. The I.Q. constancy concept needs careful interpretation.

T. F. The mind is made up of many specialized abilities.

T. F. Mechanical aptitude is independent of general intelligence.

T. F. Some psychologists believe training decreases individual differences.

T. F. The normal distribution concept supports the theory of types.

SELECTED REFERENCES FOR ADDITIONAL STUDY

Bagley, W. C. *Determinism in Education.*

A stimulating discussion of the relative influence of inherited and acquired traits in determining intelligence, achievement, and character.

Freeman, Frank S. *Individual Differences.*

This is a most excellent discussion of the nature and causes of variation in intelligence and special abilities. It includes a comprehensive and up-to-date bibliography. Every student should be familiar with this book.

Kuehner, Q. A. *A Philosophy of Education.*

Chapter XIX gives selected quotations on tests and measurements in education.

Lasker, Bruno. *Race Attitudes in Children.*

An interesting discussion of the different attitudes that children have toward other races, how these are taught and acquired, and how they may be modified.

National Society for the Study of Education. *Twenty-Fourth Yearbook,* Part II. (1925.)

A comprehensive discussion of adapting schools to individual differences. An excellent annotated bibliography up to that time is given.

National Society for the Study of Education. *Twenty-Seventh Yearbook*, Parts I and II. (1928.)

A discussion of the influence of nature and nurture upon intelligence (Part I) and upon achievement (Part II). This is a most detailed treatise. It contains a complete summary of the literature in the field.

Popenoe, Paul. *The Child's Heredity.*

This is a guidebook for parents but will be of interest to teachers as well. It contains an extensive bibliography.

Seashore, C. E. *The Psychology of Musical Talent.*

An excellent presentation of the elements of musical talent.

Terman, L. M. *Individual Differences Among School Children.*

An old but a very useful volume, covering the mental and physical traits of school children.

Thorndike, E. L., and others. *Adult Learning.*

This covers the results of two years' research in adult learning and contains much material of practical value.

Weill, Blanche C. *The Behavior of Young Children of the Same Family.*

This consists of case studies which show that there are individual environments for each child in the same family. A good bibliography is included.

Chapters discussing individual differences will be found in many books in the fields of *Secondary Education*, *Junior High School*, *Principles of Teaching*, *Principles of Education*, *Introduction to Education*, and *Educational Psychology*.

CHAPTER XVIII

PRESENT TRENDS AND PROBLEMS

Evolving educational problems. In the opening chapters of this volume emphasis was given to the constantly changing phases of educational thought and planning. As new facts are discovered in any of the basic fields of knowledge underlying educational philosophy, corresponding revisions must be made in the formulation of educational principles and values, in so far as these are affected by the new information. Similarly, educational practice is profoundly influenced by social, economic, or political changes which present new problems for the educator and call for modified procedures planned and administered in accordance with a vigorous educational philosophy. The present decade is distinctly an era of such change, bringing a corresponding group of problems for the educator, and testing in a searching way the adequacy and adaptability of his philosophy. It seems an appropriate undertaking for the concluding chapter of this book to indicate some of the important current trends in education, and to call attention to some of the evolving educational problems which are likely to claim the earnest attention of teachers during the coming transition years.

Education for adults. Recent years have seen striking developments in educational facilities for adults, opening a field of service in which the programs are yet characteristically experimental. Several factors have helped to produce this activity. Rapid changes in social and economic relationships have presented the necessity for information and understanding quite beyond the scope of previous schooling, so that adults naturally seek further light on some of these baffling developments. In many cases, new inventions and altered industrial processes have almost wiped out certain trades and vocations, and in consequence many adults have found themselves compelled to learn new vocational requirements. Others find the road to advancement barred unless further education is acquired. An increasing margin of leisure time has awakened an entirely new interest in exploring fields of general culture or in pursuing special lines of artistic or scientific achievement, all with a view to an enrichment of the non-vocational phases of adult life.

The guidance of education for adults calls for special techniques and an appropriate philosophy. Abundant participating activity on the part of the learners along lines indicated by their interests is a prime essential. This explains the marked success of the forum type of educational meeting for adults, especially well developed in Des Moines under the leadership of Superintendent Studebaker. The size of the community, the type of population, and the dominant cultural background are all vital factors to be reckoned with in meeting successfully the problem of appropriate adult education. The responsibilities arising out of this growing demand are likely to challenge the resourcefulness and educational statesmanship of school administrators for an extended period of years. Teachers of adults cannot rely upon mere authority of position, but must provide a democratic leadership which wins respect and willing co-operation.

It should be noted that much of this type of education is a spontaneous activity not directly connected with the schools. Study clubs, with membership usually limited to women, have for many years sought to widen the educational horizon of their groups. In more recent years the thousands of service clubs, meeting each week at a luncheon hour in almost every city and town of the Nation, have given attention to discussions of social, civic, and economic subjects. At their best, these programs have been of great educational value, and the total influence of these activities in broadening the information and interests of business men has been powerful. The parent-teacher organizations, after an uncertain preliminary period, have, during the past decade, developed an admirable educational program, and, with their rapid nation-wide growth, have done remarkable service in special types of education for parents. Farm bureaus, employee associations, and various other types of organizations for interested adults might be mentioned in this connection as fostering educational services to supplement those radiating from the public schools or offered as extension courses by universities and colleges.

These voluntary enterprises in adult education merit keen interest and careful observation on the part of teachers and administrators. In that free arena of trial and approval there will be demonstrated important facts as to values and methods which can meet the severe tests of enduring success in adult education. Data from such sources can be utilized most profitably in planning permanent programs in this field.

Education and international relations. One of the most impressive and disturbing trends in education since the World War has been the accentuated note of nationalism in education throughout the world. Especially in the great central and eastern areas of Europe, where political upheavals have produced dictatorships of various kinds, education has been made the tool by which the ruling groups have sought to strengthen their control through inciting a fervid and exaggerated spirit of nationalism. In the evident belief that the end justifies the means, officials in these countries have resorted to suppression of many facts, to distortion of others, and even to the fabrication of propaganda favorable to their ends. Unfortunately this exaggerated exaltation of nationalism above truth has spread fear throughout the world and influenced other countries toward considering similar policies as defensive measures, at least to the extent of restrictions upon freedom in education. The task of training for unfettered and fully informed citizenship, traditionally the American ideal, seems likely to be made more difficult for some time because of the world-wide nationalistic fears and jealousies.

On the other hand, there are certain movements that encourage the hope that better international understanding may ultimately be promoted through education. The great fields of learning and culture, such as scientific research, medicine, the arts, philosophy, psychology, and similar studies, with their applications, have traditionally risen above the limitations of political and racial barriers. Never before has there been such cordial good-will and eager co-operation among the scholars and scientists of the world. Higher education, at least, is a potent force for better international understanding, except perhaps in those unfortunate nations where political strictures prevent the universities from an unhampered investigation and search for truth. International conferences on education are becoming more frequent, and promise much through the interchange of ideas and comparative evaluations. Upon education must rest the responsibility for a more secure civilization, to be attained throughout the world by a type of training which will prepare peoples to cherish more peaceful relationships. Such co-operation, already attained among scientists, is surely a feasible goal for educators.

National participation in education. From the recognition of national interest in an adequate and efficient program of education, with equitable distribution of its opportunities throughout the Nation, there has arisen the controversial question as to the extent to which federal participation in that program is warranted. When our national Constitution was framed, education was regarded as a matter of local concern only, and was accordingly left to the control of the States. Each Commonwealth has provided for education in its own way, with the result that there are wide inequalities in the type and amount of educational opportunity available in different States. Meager school facilities and backward economic status usually go together. There seems good evidence that one contributes to the other in something of a vicious circle. Under such circumstances progress, unaided by outside help, is discouragingly slow.

Other developments have combined to make these local inequalities a matter of increased concern to the Nation as a whole. Vastly improved transportation facilities make a mobile population, and the ignorant adults from one State often become the social charges of another which had provided good schooling for its own children. As the duties of citizenship become increasingly complex, ignorance and incompetence in any part of its area present a greater menace to the welfare of the entire Nation. Under such circumstances it was inevitable that some share of the responsibility for equalization of opportunity should be assumed by the National Government. A beginning was made more than two decades ago in the encouragement of vocational education through the distribution of federal funds to the States under the terms of the Smith-Hughes Act. Since that time there has been continual pressure for a large increase in this type of aid.

The proposal most vigorously supported calls for a National Department of Education, with a secretary as a member of the President's Cabinet. Such an official would attempt to coordinate the various educational programs and to administer the increased federal aid for education in such a way as to improve and more nearly equalize the educational opportunities throughout the Nation. It would probably be difficult to make such a plan really effective without a constitutional amendment which would frankly recognize that education is no longer a matter of merely local concern, and grant appropriate authority to the National Government for its regulation. The opponents of these proposals fear an encroachment upon States' rights, with the contingent danger of over-standardization and interference with local initiative. The search for an acceptable solution to this problem will probably be a major task for educational leaders during the coming decade.

New trends in the curriculum. The most active developments and experimentation occurring in the field of education during the present decade center around the curriculum. There is a general feeling among educators that the materials of instruction need extensive revision to correspond with economic changes and the related social readjustments now taking place. Most of these revisions are still in the experimental stage. Although the basis for some of these modifications is unquestioned among educational leaders, there is not substantial agreement as to others.

Two curriculum tendencies which have general approval are those which may be roughly designated as education for leisure and consumer education. The prevalent attitude toward leisure has undergone radical change during the past two generations. Formerly, "idle time" was regarded as such a dangerous, mischief-breeding period that it should be minimized or even avoided altogether, except for elderly persons. These latter were regarded as entitled to "enjoy life," especially if they were pretty well broken by hard work, and were no longer capable of those lively activities which might get them into trouble. Later, leisure time came to be regarded as having some useful possibilities, mainly as resting periods and preparation for the important business of life, the working hours that followed. The old maxim "Satan always mischief finds for idle hands to do" was gradually superseded, in frequency of repetition, by another — "All work and no play makes Jack a dull boy." Play, however, was distinctly for the purpose of brightening up Jack's waning vim for the subsequent sessions of work. Serious-minded adults who spent any time in recreation had a guilty feeling unless some claim of practical profit could be demonstrated for the activity, or an accommodating physician would assume the responsibility of recommending it for them. Modern developments have brought a third stage in which leisure is coming to be recognized as having great potential values for its own sake, not only for character and personality, but for general culture and abundant living.

The dangerous possibilities of misused leisure have in no wise lessened during this transition. Consequently, there exists a heavy responsibility for educators to guide wisely the activities which are to prepare for a richer and finer use of increased leisure. Curriculum revision to this end must be thoughtfully studied and evaluated. Equal care must be given to enlightening and guiding community understanding of this newer responsibility, since there will be conservatives critical of what they are likely to term "education for idleness." Emphasis upon the crucial importance of the right use of leisure as affecting character and citizenship has unquestioned justification. The establishment of supplementary objectives in such training upon a sound and convincing basis, with appropriate curriculum provisions for their attainment, is an urgent modern challenge.

As suggested in a preceding paragraph, there is now a marked tendency to include in the curriculum materials designed for better education of the individual as a consumer. Modern advertising and salesmanship have perfected their attacks upon the prospective purchaser to such a formidable degree that, without defensive information and criteria for judging values, he is comparatively helpless in the face of sales propaganda. It is generally agreed that the schools should provide some training in tests for materials, the simpler mathematics of investment and installment costs, the dangers of accepting unquestioned the claims of advertisers, and practical methods of investigating and verifying the purported value of an article for the particular service desired. Innovations in this field of education, though promising, are still experimental but merit study and appraisal by forward-looking educators.

Integration of curriculum materials. Another wide-spread tendency which still arouses controversial reverberations is that which seeks to break down traditional distinctions between school subjects as to segregated content. In the elementary school, where all the subjects for a particular grade are usually taught by the same teacher, progress in unifying materials from various subjects around some important focus of interest has not been especially difficult. At that level, there has already been a fair degree of such integration very generally accomplished wherever a sympathetic administration and competent teachers have made the attempt. The issue is much more warmly contested in the secondary schools where the traditional sanctity of certain high-school subjects and the specialized training, as well as narrowed interests of most teachers, constitute difficult barriers to any very extensive crossing of borders in a new union of materials. Even those teachers willing to make an earnest effort find it hard to change fixed habits of thought and practice in regard to accustomed sequences and categories of subject-matter. On the other hand, the growing conviction that much of the content in traditional secondary-school subjects fails to function in any vital way in the lives of the pupils has provoked an insistent and very general demand that such subject-matter be re-evaluated in the light of modern needs, and that those parts found worthy of retention be given coherence and significance in a way comprehensible to the pupil in the light of purposes and values which he can accept.

This obligation has received such general and sympathetic recognition from thoughtful educators that experimental curricula are now being developed and tested, on a nation-wide scale, in a great number of co-operating secondary schools. In practically all these schools, the experimental procedure involves integration and regrouping of subject-matter around significant centers of interest, thus developing comprehensive units having component material drawn from various subjects or fields of learning. The methods by which this new approach to subject-matter is made vary rather widely. In fact, the variety of experimental procedures holds great promise for the establishment of comparative values. The sympathetic and co-operative attitude on the part of most colleges and universities toward this movement, with at least temporary modification of admission strictures, removes the chief historic obstacle to changes in the content of high-school subjects. A period of several years may yet be required for a fair evaluation of these innovations, but they are certain to influence in a fundamental way the selection and organization of curriculum materials in all our secondary schools.

Popularized higher education. In the chapter dealing with Administrative Organization (pp. 221–224), mention was made of the increasing demand for education beyond the high school, with the consequent problems confronting the administrators of our colleges and universities. In a modified way, the factors creating increased demand for adult education affect the growing array of recent high-school graduates. While many of these are not of the type most usually welcomed by the universities, certain of these institutions have made provision for a generalized educational service to students not possessing the superior ability or scholarly interests usually required for success in the specialized fields of higher education. The best-known of these is the University of Minnesota, previously mentioned, with its General College open to students in the lower division. In its adaptation of the idea, the University of Florida has generalized all courses in the lower division.

Municipal colleges and many of the state colleges have adapted or extended their offerings to meet the current demand for a more popular type of higher education, designed to meet the immediate needs and interests of students who are not likely to continue for the full four traditional years of collegiate training.

In this development of "people's colleges," the junior college movement has made the most impressive showing. Especially popular in those localities somewhat distant from other institutions of higher learning, the number of junior colleges has steadily increased, and their distribution has become more general. Their maximum development has occurred in California where, during the decade from 1925 to 1935, the number increased from 27 to 34, and the total enrollment grew from 2350 to 33,000. Records in that State show that less than one fifth of these students ever attend any higher institution of learning, and, consequently, the obvious obligation is to offer completion courses, not exceeding two years in length, which provide educational experiences of the greatest immediate value and significance for the student. To at least a fair degree, this responsibility is accepted by the junior college administrators. These institutions tend to become also the centers for adult education and for general educational service to the community, thus meriting more fully the designation "people's colleges." This development in one State is typical of the trend elsewhere, and is indicative of the widening scope of public education.

Less vocational specialization. A more general and comprehensive type of vocational preparation is tending to replace the traditionally narrow specialization. The past few years have suddenly revealed the need for a vocational education which will provide the individual with a wider scope of activity, a broader mental grasp of the social implications of his work, and a more extensive application of his training. This broadening trend has been motivated by the modern economic and industrial readjustments, and by the urgent necessity in many cases of rehabilitating misfit specialists into a different kind of technological set-up from that for which they had been so thoroughly and carefully trained. In our rapidly changing industrial life vocational preparedness, except in a general way, is very difficult. Vocational flexibility has recently been found much more practical than specialized training for a particular type of work. Since specialization along one line must of necessity be at the expense of other lines, and since certain vocational activities are being greatly modified or becoming obsolete, yesterday's special fitness may become tomorrow's unfitness. An individual's vocational preparedness today is something like a nation's military preparedness — a fallacy unless the nations know the type of warfare and the implements of warfare to be used when the time arises for engaging in battle. An adaptable and somewhat general preparation may be more serviceable for many young people than a preparation of a limited and restricted sort. Highly specialized vocational and professional schools, such as engineering, for example, are tending to replace or supplement some of the more traditional and technical subject-matter with subject-matter from the social-science field. There is a definite tendency toward less vocational specialization of the narrow type. It might be said, too, that the vocational motive in the public schools is receiving less emphasis, and that more attention is being given to leisure-time pursuits and other socializing activities.

Socialized health. The preventive and curative health problem is becoming so much of a social concern that it is gradually and inevitably passing from a private matter to a public function, even as education did in the United States a century ago. In fact the causes, the arguments for and against, and the general characteristics of the socialized health movement are all very similar to those involved in the development of American public education. Under present social and economic conditions the health and physical fitness of a particular individual concerns directly or indirectly other members of the social group. Individual ignorance, poverty, or indifference cannot be much longer allowed to prevent anyone from receiving the best health attention society has developed and has to offer. Since health education has for some time been one of the cardinal objectives of the public schools, the schools have been and are a potent influence toward a socialized health program for all.

That the medical profession itself should have an adequate grasp of and a sufficient concern with the social implications of preventive and curative health knowledge and skill goes without saying. That it does not is well known. Harold Laski, the British political scientist, has recently stated the situation as follows:[1]

> ... In the field of public health the pressure for great social reforms has too often come from without the profession, even when the facts leading to that pressure have been gathered by doctors who, because they were in the service of State or city, could afford to make the revelations urgent to an advance of public well-being.... The diet of poor children in relation to quality of their school-work, the absence of adequate recreational facilities in the great cities, the vast problem of sex-hygiene in schools, the standards of relief in relation to nutrition for the unemployed — upon all these things, to take only some of the outstanding issues of the time, what is notable about the medical profession as a whole is its absence of any coherent civic sense. The occasional doctor may care profoundly about these things. The profession as a profession lacks that sense of urgent obligation to the public which alone could effect the radical reforms that are essential (p. 681).

In his discussion, Dr. Laski maintains that the public interest is jeopardized by the competitive nature of the profession of medicine. The system and not the individual physician is to blame for this situation. The economic insecurity and uncertainties of competitive private practice prevent the profession from offering the guidance to the public which it needs. In private success social and political expediency, and consideration for influential individuals and groups, are involved along with scientific knowledge and skill. It is only the exceptional physician who can so arrange his private affairs that he is able to keep up with the latest medical developments by further study. He has little to fear from expert criticism in his field. His emphasis is almost entirely upon curative medicine, with little or no concern with the more important preventive side. It has been demonstrated that under private practice no socially adequate attitude for the medical profession is to be expected. Like education, health is a social problem and must be included as a social function. Whether, like education, socialized health will be handled by the State or in some other manner is still to be worked out. The present tendency is toward a state program, and will be unless the medical profession itself offers a better plan.

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[1] Laski, Harold. "The Decline of the Professions," in *Harpers Magazine*, vol. 171, pp. 679–82 (November, 1935).

School finance. A narrow and distorted view of education and its financing has led some to believe that money is being lavished upon our public schools, and that this single item of public expenditure is becoming so large that society cannot carry the enormous load of taxation it entails. This, of course, is a view lacking proper perspective. The fact is that the cost of education is relatively low when compared either with our other national expenditures or with our national savings, and when divided up among the twenty-five million and more pupils attending school. For every dollar we put into education, we spend three dollars for luxuries, three dollars for new buildings, four dollars for passenger automobiles, and save ten dollars. Our tobacco bill alone approximates our school bill. We in reality spend a relatively small amount upon the important matter of educating the Nation's children.

Then, too, the increased cost of the public schools during the past two decades is more apparent than real. The actual increase in the cost of education has been relatively slight. When the depreciation of the purchasing power of a dollar and the increased number of pupils attending the schools are considered, the cost of education is not markedly greater than it was before the World War. The real salary of the average teacher is not very different from what it was during the low wages of pre-war days. It will not buy much more. The seeming increased cost of education is largely an adjustment to present-day values, and is not out of proportion with the advance in other types of service and commodities. Along with the decrease in the purchasing power of the dollar, there has been a very large increase in the school enrollment. The high-school enrollment has increased 400 per cent during the past twenty years. The cost of education is not reaching the breaking-point. The crisis in public school finance lies elsewhere.

If inadequate school support is not due to the high cost of education nor to the inability of society to pay, where is the difficulty? It lies in the antiquated public taxing system. Real property continues to bear the heaviest tax burden for educational and other social purposes when it no longer represents the wealth of the Nation, and when its possession may be a liability rather than an asset. The wealth of the Nation does not educate the children of the Nation. Many of the greatest sources of wealth in modern society are in no way, or but slightly, connected with the possession of real property. Consequently the tax burden is not fairly distributed according to ability to pay in terms of net income. The obsolete tax system must be remodeled toward a more just and equitable spreading of the tax burden, and toward an equalization of educational opportunity for all parts of our Nation. How this is to be done is a problem for tax experts. Meeting the inevitable resistance of new tax sources and putting the new system into effect is a problem for real statesmen.

Educational leadership. The teacher can no longer withdraw from the affairs of the world, avoid criticism, and confine his activities to instruction in a few fundamental skills and to introducing the youth of the land to the social heritage accumulated up to a generation or two ago. That may have been sufficient when social progress moved slowly and each generation lived much the same as the preceding one. Now the full significance of education — *educere* — must come into play and proceed to lead forth and direct the social group itself into better ways and along more desirable lines. Such educational leadership must be assumed and must become a potent influence, a directing power, and an active part in formulating social policy. This does not mean that the teacher should attempt to impose his ideas upon others, try to dominate public opinion, and dictate policies; but rather that he should stimulate co-ordinated and co-operative thinking upon social problems, whether controversial or otherwise, should teach individuals to face facts, and should assume some community leadership in the place where he lives as a citizen. His thinking should be more unbiased than those with special interests at stake.

The position of education in social change has been well stated by John Dewey and John L. Childs:[1]

> . . . We plead for an improved and enlarged education in order that there may be brought into existence a society all of whose operations shall be more genuinely educative, conducive to the development of desire, judgment, and character. The desired education cannot occur within the four walls of a school shut off from life. Education must itself assume an increasing responsibility for participation in projecting ideas of social change and taking part in their execution in order to be

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[1] Kilpatrick, W. H. (ed.). *The Educational Frontier*, p. 319. 1933. D. Appleton-ntury Company.

educative. The great problem of American education is the discovery of methods and techniques by which this more direct and vital participation may be brought about.

New-type teachers. To give a clear concept of the modern teacher and the importance of his work was the purpose of Chapter XII. Since this was discussed there in considerable detail, it is necessary here only to remind the reader of the social significance of the teacher and of teaching, and to point out the present trend toward these new-type teachers. More and more young people of promise and ability, men as well as women, are turning toward teaching as their life work. Teacher-training institutions are overcrowded with men and women desirous of becoming teachers. As a result, strict requirements are being set up for selecting only the best for the teacher-training courses. This means that the teaching ranks are being gradually filled each year by new recruits who have superior and progressive preparation for their important work, who through their impressive personalities and courage will create for themselves and the profession social recognition and leadership wherever they go, and who will be able to work out the methods and techniques necessary for placing education in its proper non-partisan relationship to the social, economic, and political affairs of life. Not only are new-type teachers raising the teaching personnel level, but we can confidently anticipate for the profession an increasing number of Bagleys, Bodes, Cubberleys, Deweys, Judds, Kelleys, Kilpatricks, Termans, Thorndikes, and their like.

TOPICS FOR DISCUSSION

1. In view of the exaggerated spirit of nationalistic non-co-operation throughout most of the world, how far is it wise for American education to attempt alone to teach the opposite?
2. To what extent is it justifiable to carry on a program of adult education supported mainly at public expense? What distinctions among adult groups would you advocate?

3. What interpretation of "academic freedom" do you consider defensible on the part of public school teachers?
4. What "variables" in economic conditions make it difficult to devise an equitable system of financial support for education?
5. How have recent social and economic conditions made imperative new and more comprehensive educational guidance in the secondary schools?
6. What considerations are involved in the question as to the relative advantages for teacher-training of a separate institution or of specialized courses in a general college? How has the increase in social responsibilities of the teacher affected this issue?
7. What do you regard as the most important problem in readjustment now confronting education?

SELECTED REFERENCES FOR ADDITIONAL STUDY

Counts, George S. *The Social Foundations of Education.* Report of Commission on Social Studies.

Takes strong position as to responsibility of schools for improving social conditions of the future.

Department of Superintendence. *Thirteenth Yearbook, Education and Social Change.* (1935.)

A representative group of prominent educators present a variety of viewpoints, from radical to conservative, as to how education should meet new obligations.

Doughton, I. *Modern Public Education — Its Philosophy and Background.*

Chapters XVI and XVII take up experimentation in the public schools and the problem of freedom to do right.

Kilpatrick, W. H., and others. *The Educational Frontier.*

In this volume seven leaders in modern educational thought discuss needed changes. The first chapter, written by Bode, is especially full of challenging ideas.

Russell, W. F. "Federal Aid — Boon or Bane"; in *School and Society,* vol. 39, pp. 289–96.

Warns of dangers if federal aid to education should bring federal control.

Studebaker, J. W. "Liberalism and Adult Civic Education"; in *School and Society,* vol. 42, pp. 489–98.

Champions freedom in discussion and investigation as essential in adult education.

INDEX

Abilities, special, 310, 311
Academy, private, 200
Activities, socialized, 261–63; criteria for classroom, 280, 281
Adaptation. *See* Adjustment
Adjustment, education as, 25, 26, 70; types of behavior, 26–29; biological, 27, 68–70; social, 27, 28; personality, 28, 29; superiority of human, 70–85
Adler, A., studies of personality, 111
Administration, functions of, 215, 216, 224–30; professional leadership in, 224, 225
Adolescence, significance of, 85, 86
Adults, education for, 316–18
Age, relation to maturity, 307, 308
Agnosticism, principle of, 42
Aims. *See* Objectives
Alfred the Great, encouragement of education by, 185
Allport, F. H., on importance of language, 162; *Social Psychology*, 162 *n.*
Animals, similarity of man to other, 65–68
Appreciations, teaching of, 260, 261
Aristotle, contribution to education, 51; study of mental life, 93
Arithmetic, social value of, 163, 164
Ascham, R., teacher of Queen Elizabeth, 187
Athens, class education in, 184
Attendance, beginnings of compulsory school, 191
Attitudes, teaching of, 260, 261

Bagley, W. C., on transfer of training, 131; on Progressive Education, 257, 261; on curriculum, 272
Baltimore plan, to provide for individual differences, 303
Batavia plan, to provide for individual differences, 302
Behavior, inherited, 117–20
Behaviorism, method of, 99, 103–05
Bentley, I. M., on psycho-physical system of psychology, 109; *The New Field of Psychology*, 109 *n.*
Biology, as basis of education, 65–97
Blind, education of, 188–91
Bode, B. H., statement of educational aims, 10, 11; *Fundamentals of Education*, 10
Book, W. F., experiment on relation of interest and learning, 126
Braille, L., inventor of alphabet for blind, 190
Brain, development of human, 74–79
Bruner, H. B., Stratemeyer and, on course of study, 276, 277; *Rating Elementary School Courses of Study*, 276 *n.*

Cambridge plan, to provide for individual differences, 302
Campbell, D. S., Caswell and, *Curriculum Development*, 271 *n.*
Caswell, H. L., and Campbell, *Curriculum Development*, 271 *n.*
Cattell, J. M., study of social heritage, 310
Cerebro-spinal system, complexity of, 76–79
Chapman, J. C., and Counts, *Principles of Education*, 59 *n.*, 280 *n.*; on classroom activities, 280, 281
Character, education for ethical, 173–75
Charlemagne, encouragement of education by, 185
Chase, H. W., on problems facing state universities, 222, 223
Childs, J. L., Dewey and, on responsibility of education for leadership, 330, 331
China, class education in, 184

Church, place in social organization, 147; extension of education by Protestant and by Catholic, 186, 187; attitude toward education of women, 187, 188; early American schools conducted by, 197, 198
Citizenship, education for, 168–70
Claparède, on functionalism, 102; "Feelings and Emotions," 102 *n.*
Classroom, necessity for organization in, 286; physical features of, 286–88; as social unit, 288, 289; constructive social control in, 289, 290; misconduct in, 290–93; self-government in, 293, 294; adaptability of organization of, 294, 295
Cleveland, F. A., *Modern Scientific Knowledge*, 89 *n.*
Clubs, service, relation of schools and, 229; educational programs of, 317, 318
Colleges, changing problems of, 221–24; development of junior, 224, 325; demand for generalized courses in, 324, 325
Comenius, contribution to education, 45, 46; *The Great Didactic*, 45
Commission on the Reorganization of Secondary Education, statement of educational aims, 11, 12; *Cardinal Principles of Secondary Education*, 11 *n.*, 13, 219
Consumer, education of, 168, 322, 323
Cost, of education, 328, 329
Counts, G. S., Chapman and, *Principles of Education*, 59 *n.*, 280 *n.*; on classroom activities, 280, 281
Course of study, definition of, 270, 271; characteristics of good, 276, 277; teacher participation in preparation of, 277–79. *See also* Subject-matter
Cripples, education of, 188, 190, 191
Cubberley, E. P., statement of Dewey's philosophy, 56, 57; *Public Education in the United States*, 56 *n.*, 201 *n.*; classification of elementary school subjects, 204, 205; *An Introduction to the Study of Education*, 204 *n.*
Curriculum, definition of, 270, 271; new trends in, 321–23; integration of, 323, 324. *See also* Course of study *and* Subject-matter

Dalgarno, G., originator of manual alphabet, 189
Dalton plan, to provide for individual differences, 303
Deaf, education of, 188, 189, 191
Defectives, education of mental, 188–91
de l'Espée, Abbé, originator of one-hand alphabet, 189
Democracy, Mazzini's definition of, 9
Democracy, in elementary school, 216–18
Depression, influence on education of economic, 206–08
Descartes, R., distinction between mind and matter, 93
Dewey, J., statement of educational aims, 9, 10; *Democracy and Education*, 10 *n.*; contribution to education, 55–57; influence on expanding school, 205; on school environment, 241; and Childs, on responsibility of education for leadership, 330, 331
Differences, individual, importance of, 299; measurement of, 300, 301; educational significance of, 301, 302; providing for, 302–04; factors contributing to, 304–10; influence of sex on, 304–06; influence of race on, 306, 307; effect of maturity on, 307, 308; influence of family heredity on, 308, 309; effect of environment on, 309, 310; special abilities, 310, 311; emotional and temperamental, 311, 312
Discipline, education as mental, 22, 23; classroom, 290–94
Drill, use of, 259
Dualism, monism and, 41, 42

Economic life, education for, 166–68
Education, significance of philosophy of, 3–19; conflicting traditional conceptions of, 20–23; by accretion and storage, 21, 22; as mental

discipline, 22, 23; psychological approach in, 23–34; as adjustment, 25, 26; as self-activity, 29, 30; direction of, 33, 34; philosophies of, 38–62; biological basis of, 65–97; psychological basis of, 98–139; sociological basis of, 140–79; importance to social group, 152–54; relation of social activities to objectives of, 158, 159; cardinal principles of American, 159; vocational, 166–68, 325, 326; of consumer, 168, 322, 323; historical basis of, 180–211; informal, 180, 181; beginning of formal, 181, 182; institutionalized, 182, 183; class, 184, 185; mass, 185–87; of women, 187, 188; of handicapped, 188–91; universal, 190–92; American, 195–211; European influence on early, 196–98; transition period in, 198–201; establishment in Massachusetts of government compulsory maintained, 198; Federal Government land-grant policy for, 200; American awakening to public school, 201–03; expansion of, 203–06; influence of economic depression on, 206–08; period of readjustment in, 206–08; administrative organization of, 215–33; changes in higher, 221–24; principles and methods of Progressive, 255–57, 259–61; significance of individual differences to, 301, 302; present trends and problems in, 316–32; for adults, 316–18; nationalism and internationalism in, 318, 319; participation of national government in, 319–21; for leisure, 321, 322; popularizing of higher, 324, 325; cost of, 328, 329; financial support of, 329, 330; responsibility for leadership, 330, 331

Egypt, class education in, 184

Elizabeth, Queen, education of, 187

Elizabeth plan, to provide for individual differences, 302, 303

Emotions, educational importance of, 32; inherited, 120, 121; relation to learning, 135, 136

Engelhardt, N. L., Strayer and, statement of educational aims, 11; *The Classroom Teacher at Work in American Schools*, 11 *n.*

Engineering, practical philosophy of, 3–5

England, development of educational system in, 195, 196

Environment, reliance of education on control of, 33, 34; teacher as part of, 235, 236; teacher as manipulator of, 239–41; relation to individual differences, 309, 310

Existentialism. *See* Structuralism

Family, importance of, 147

Feeble-minded, education of, 188–91

Fowler, B. P., on Progressive Education, 256

France, industrial education in, 192; development of educational system in, 195

Freeman, F. S., on Progressive Education, 257; *Individual Differences*, 308 *n.*

Freud, S., "analytical" psychology of, 111

Froebel, F., contribution to education, 48; influence on American education, 204

Fuller, F. D., *Scientific Evaluation of Textbooks*, 273 *n.*

Functionalism, method of, 99, 100, 102, 103

Galton, F., theory of heredity, 89, 90

Germany, compulsory school attendance in, 191; industrial education in, 192; development of educational system in, 195

Gestalt, psychology of, 99, 105–08

Glands, endocrine or ductless, 91–93

Government, establishment in Massachusetts of compulsory education by, 198; land-grant policy of Federal, 200; education and national, 319–21

Group, plant and animal life in, 140, 141

Group, social, evolution of, 141, 142;

advantages of life in, 142–44; importance of communication to, 144, 145; classification of knowledge accumulated by, 145–47; growth of social institutions within, 147, 148; social inheritance of, 148, 149; relationship of individual to, 149–51; increasing significance of, 151, 152; importance of education to, 152–54; relation of educational aims to activities of, 158, 159; importance of health to, 159–62; value of fundamental processes to life of, 162–64; importance of worthy home membership for, 164–66; education for economic life in, 166–68; training for citizenship in, 168–70; importance of worthy use of leisure to, 170–73; training for ethical character in, 173–75
Guidance, in secondary school, 220, 221

Habits, formation of, 69; acquisition of skills and, 133, 134; teaching of, 258, 259
Hall, G. S., *Adolescence*, 85 *n.*
Hand, freedom of, 71–73
Health, importance of, 159–62; education for, 160–62; socialized program for, 326–28
Herbart, J. F., contribution to education, 47, 48; influence on American education, 204
Heredity, Galton's theory of, 89, 90; Mendel's laws of, 90, 91; relation to individual differences, 308, 309
Hippocrates, on medical art, 160
History, of education, 180–211
Home, education for worthy membership in, 164–66, 168
Horne, H. H., *The Philosophy of Education*, 57 *n.*
Humanities, classification of, 146
Hutchinson, A., banishment of, 188

Idealism, principles of, 42–44; contributions to education, 44–48
India, class education in, 184
Individual, relation of society and, 20, 21, 24, 149–51; as starting-point in education, 24, 25; importance of understanding, 298, 299. *See also* Differences, individual
Infancy, prolongation of, 82–85
Information, teaching of, 259, 260. *See also* Knowledge
Inheritance, social, 148, 149. *See also* Heredity
Instincts, number and nature of, 118–20
Institutions, evolution of social, 147, 148
Integration, of subject-matter, 279, 280, 323, 324
Intelligence, variations in general, 121–24; measurement of general, 121, 122; individual and group differences in, 122, 123; race and sex differences in, 123, 124
Interest, effect on learning, 126, 127
Italy, education during Renaissance in, 185

James, W., on freedom, 31; on pragmatism, 41 *n.*, 42, 43; *Pragmatism*, 41 *n.*; contribution to education, 55; *Talks to Teachers on Psychology and to Students on Life's Ideals*, 55; study of memory practice, 130, 131
Jefferson, T., educational proposals of, 199, 200
Jung, C. G., psychology of, 111

Kilpatrick, W. H. (ed.), *The Educational Frontier*, 330 *n.*
Knowledge, relation to education, 22; mastery of, 134; classification of accumulated, 145–47
Koffka, K., on Gestalt psychology, 107; "Introspection and the Method of Psychology," 107 *n.*
Kohler, W., on Gestalt method of analysis, 107, 108; *Gestalt Psychology*, 107 *n.*

Labor, problem of child, 191
Laird, D. A., study of physical conditions and learning, 128
Language, importance to social group,

144, 145; social importance of command of, 162, 163
Laski, H., on socialization of public health, 327, 328; "The Decline of the Professions," 327 *n.*
Learning, self-activity as basis of, 30–33; variations in capacity for, 121–24; effects of age and maturity on, 124–26; effects of interest and motivation on, 126–28; influence of physical conditions on, 128, 129; transfer of training in, 129–32; types of activity in, 132, 133; acquisition of habits and skills, 133, 134; mastery of knowledge, 134; emotional outcomes of, 135, 136; measurement of, 136; essential phases of process of, 252–55; adapting teaching methods to types of, 258–61. *See also* Intelligence
Leisure, education for worthy use of, 170–73, 321, 322
Locke, J., contribution to education, 51, 52; on aim of education, 159
Longfellow, H. W., on value of endurance, 159

Man, similarity to other animals, 65–68
Marriage, education for, 165, 166
Massachusetts, compulsory school attendance in, 191; establishment of government compulsory maintained schools in, 198
Masses, beginning of education for, 185–87
Materialism. *See* Naturalism
Maturity, relation to individual differences, 307, 308; relation of age and, 307, 308
Mazzini, G., definition of democracy, 9
Measurement, of educational products, 136, 137
Mendel, G., laws of heredity, 90, 91
Middle Colonies, early education in, 197, 198
Mind, concepts of, 93, 94
Monism, and dualism, 41, 42; forms of, 42, 43
Motivation, effect on learning, 127, 128
Mount Vernon plan, to provide for individual differences, 302

Napoleon, conception of education, 20, 21
National Education Association, statement of cardinal principles of American education, 159, 219
Naturalism, principles of, 42, 48–51; contributions to education, 51–53
New England, early education in, 198
Newman, H. H., on variation, 89
Newspapers, school publicity in, 229, 230
New York State, development of public education in, 200
North Denver plan, to provide for individual differences, 302

Objectives, selection of educational, 8, 9; modern statements of educational, 9–12; criteria for determination of, 12–14; relation of social activities to educational, 158, 159

Page, D. P., on transfer of training, 130; *Theory and Practice of Teaching,* 130 *n.*
Parenthood, education for, 165, 166
Parent-Teacher Association, value of, 228, 229; educational program of, 318
Personality, integration of, 28, 29; analytical studies of, 111
Pestalozzi, J. H., contribution to education, 46, 47; influence on American education, 204; influence on teacher training, 245
Philosophies, of education, 38–62
Philosophy, significance of educational, 3–19; of engineering, 3–5; meaning of educational, 5, 6; understanding, selection and evaluation in educational, 6, 7; practical significance of educational, 15, 16; nature of, 38, 39; factors conditioning educational, 39–41; effect of modern conditions on educational, 57–59

Plato, contribution to education, 44; on cardinal virtues, 174; on education of women, 187; *Republic*, 187; recognition of individual differences, 301

Portland plan, to provide for individual differences, 302

Pragmatism, principles of, 42, 43, 53–55; contributions to education, 55–57

Principles, evaluation and organization of, 14, 15

Problem-solving, as method of learning, 260

Processes, social importance of command of fundamental, 162–64

Project, teaching value of, 262, 263

Protestant revolt, effect on education of, 186

Psychology, approach to education through, 23–34; definition of human, 94; as basis of education, 98–139; evolution of, 98, 99; divergent systems of, 99–111; structuralist, 99–102; functionalist, 99, 100, 102, 103; behaviorist, 99, 103–05; psychophysical, 100, 108–10; "dynamic," 102; "hormic," 102; psycho-analysis, 111; application to education of principles of, 116–39

Public, relation of schools and, 227–30

Pueblo plan, to provide for individual differences, 302, 303

Punishment, functions of, 291; administration of, 291–93

Quotient, intelligence, 300

Race, relation to individual differences, 306, 307

Recitation, socialized, 261–63

Religion, early influence on education, 183, 184. *See also* Church

Renaissance, education in Italy during, 185; education of women during, 187, 188

Revolution, effect on education of industrial, 191

Rogers, C. G., on thyroid gland, 68, 69; *Textbook of Comparative Physiology*, 68 *n.*, 92 *n.*; on pituitary glands, 92; *Textbook of Comparative Physiology*, 92 *n.*

Rome, class education in, 184; education of women in, 187

Rousseau, J. J., conception of education, 20; contribution to education, 46; *Émile*, 46; on rights of individual, 149, 150

Rugg, H., and Shumaker, on Progressive Schools, 256, 257; *The Child-Centered School*, 257 *n.*

Saint Paul, on position of women, 187

Santa Barbara plan, to provide for individual differences, 303

School, place in social organization, 148; establishment of, 183, 184; beginnings of compulsory attendance at, 191; charity- or pauper-, 197; parochial, 197, 198; Infant, 200; Monitorial, 200; early Sunday, 200; struggle for general establishment of public, 201–03; establishment of normal, 204, 245; organization and administration of elementary, 216–18; development of secondary, 218–21; contributions of junior high, 220; promoting public co-operation with, 227–30; Progressive, 255–57; as social unit, 288, 289

Sciences, as basis for education, 7, 8; naturalism as philosophical generalization of, 50, 51; physical, 146; biological, 146; social, 146

Séguin, E., work with mental defectives, 190

Self-activity, education as, 29, 30; as basis of all learning, 30–33

Sex, relation to individual differences, 304–06

Shumaker, A., Rugg and, on Progressive Schools, 256, 257; *The Child-Centered School*, 257 *n.*

Skepticism, principle of, 42

Skills, acquisition of habits and, 133, 134; teaching of, 258, 259

Smith-Hughes Act, vocational education under, 320
Snedden, D., on Progressive Education, 257
Societies, City School, 200
Society, relation of individual and, 20, 21, 24, 149–51. *See also* Group, social
Sociology, as basis of education, 140–79
Socrates, contribution to education, 44
South, early education in, 197
Speech, adjustment through power of, 73, 74
Spencer, H., contribution to education, 52; mechanistic viewpoint of, 104; on social purposes of education, 158, 159
State, functions of political, 147, 148; use of mass education under, 190–92
Storage, conception of educational growth by, 21, 22
Stratemeyer, F. B., and Bruner, on course of study, 276, 277; *Rating Elementary School Courses of Study,* 276 *n.*
Strayer, G. D., and Engelhardt, statement of educational aims, 11; *The Classroom Teacher at Work in American Schools,* 11 *n.*
Structuralism, method of, 99–102
Studebaker, J. W., development of forum, 317
Subject-matter, significance of, 270; selection of, 270–85; traditional organization of, 274, 275; influence of quantitative standards on, 275; pressure of special groups to include certain, 275, 276; integration of, 279, 280, 323, 324; relation of classroom activities to, 280, 281; flexibility of, 281, 282; new trends in, 321–23. *See also* Course of study *and* Curriculum
Subjects, classification of elementary school, 205
Supervision, relation to teaching, 263–66; scope and methods of, 264–66
Suzzallo, H. A., on textbooks, 273

Taxation, problem of just and equitable, 329, 330
Teacher, importance of, 234, 235; as part of environment, 235, 236; physical and mental fitness of, 236–38; social and philosophical stability of, 238, 239; as manipulator of environment, 239–41; academic preparation of, 241, 242; professional training of, 242–45; social importance of, 245, 246; participation in preparing course of study, 277–79. *See also* Classroom
Teachers, council of, 225; administrative importance of choice of, 226; influence of new-type, 331
Teaching, social significance of, 245, 246; methods of, 251–63; basis of good, 251, 252; phases of learning and, 252–55; "progressive" methods of, 255–57, 259–61; fundamental principles of method in, 257, 258; adaptation to types of learning, 258–61; of habits and skills, 258, 259; of information, 259, 260; of appreciations and attitudes, 260, 261; use of socialized activities and projects in, 261–63; relation of supervision to, 263–66
Testing, standardized and objective, 136
Textbooks, use of, 273, 274
Thorndike, E. L., on instincts, 118; on effect of age on learning, 125; and Others, *Adult Learning,* 125 *n.*; study of physical conditions and learning, 128; on transfer of training, 131, 132
Tilney, F., "How the Hand, Foot, and Brain Led the Way to Humanity," 73 *n.*; "The Human Brain, Master of Our Destiny," 76 *n.*
Titchener, E. B., exponent of structuralism, 100, 101; "Problems of Experimental Psychology," 101 *n.*
Training, transfer of, 129–32; of teachers, 242–46

Transfer, of training, 129–32

United States, European influence on early education in, 196–98; transition period in education in, 198–201; public school awakening in, 201–03; educational expansion in, 203–06; educational readjustment following economic depression in, 206–08
Universities, changing problems of, 221–24; demand for generalized courses in, 324, 325
University of Florida, generalizing of courses in, 324
University of Minnesota, General College plan, 223, 224, 324

Variation, biological law of, 86, 87; causes of, 87–89
Virginia, early education in, 197
Vocations, education for, 166–68; new trends in training for, 325, 326

Warren, H. C., definition of human psychology, 94; *Elements of Human Psychology*, 94 *n.*
Watson, J. B., on behaviorism, 103, 104; on instincts, 118, 120
Wells, H. G., on education, 153
White, E. E., on transfer of training, 130; *The Elements of Pedagogy*, 130 *n.*
Winnetka plan, to provide for individual differences, 303
Women, education of, 187, 188
Woodworth, R. S., on behaviorism, 105; "Four Varieties of Behaviorism," 105 *n.*; on instincts, 118; on transfer of training, 131
Wundt, W., originator of structuralism, 100